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ABSTRACT

Lowering fertility will require both a reduction in desired family size and provision of family planning services that respond to clients' needs. The World Fertility Survey and the Contraceptive Prevalence Survey found sizable groups of women with an "unmet need" for contraception. Investigators have also found evidence of unanswered need among other groups, including adolescents and men. The gap between fertility preferences and contraceptive behavior is explained in terms of the objective and subjective costs of fertility regulation to people. Public and private family planning programs in many parts of the developing world have succeeded in reducing the costs of fertility regulation to clients through innovations in service delivery. The persistence of unmet need in many countries calls for more research into the reasons for unanswered need and the cost- effectiveness of service innovations to satisfy it. Eight pages of references and a listing of related publications from the World Bank are included. (Author/CFR)

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Family Planning Programs

The Clients' Perspective

Martha Ainsworth

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Number 676

POPULATION AND DEVELOPMENT SERIES
Number 1

Family Planning Programs

The Clients' Perspective

Martha Ainsworth

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Martha Ainsworth, a consultant to the World Bank, was a member of the core team who wrote *World Development Report 1984.*

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FOREWORD

This paper is one in a special series of World Bank Staff Working Papers on population change and development. Prepared as background papers for the World Development Report 1984, they provide more detailed treatment and documentation of the issues dealt with in Part II of the Report. The papers cover a range of topics, including the effects of population growth and change on economic development, the determinants of fertility and mortality, the links between population growth and internal and international migration, and the management, financing, and effectiveness of family planning programs. They include several country and regional studies of fertility change and population policy.

The background papers draw on a large number of published and unpublished studies of individual researchers, on Bank policy analysis and research, and on reports of other organizations working on population and development programs and issues. The papers are the work of individuals and the views and interpretations expressed in them do not necessarily coincide with the views and interpretations of the Report itself.

I hope these detailed studies will supplement the World Development Report 1984 in furthering understanding of population and development issues among students and practitioners of development.

Nancy Birdsall
Staff Director
World Development Report 1984

Some of the Papers in the Population and Development Series

Ainsworth, Martha. Family Planning Programs: The Clients' Perspective. World Bank Staff Working Paper no. 676.

Boulier, Bryan L. Evaluating Unmet Need for Contraception: Estimates for Thirty-six Developing Countries. World Bank Staff Working Paper no. 678.

Bulatao, Rodolfo A. Expenditures on Population Programs in Developing Regions: Current Levels and Future Requirements. World Bank Staff Working Paper no. 679.

Bulatao, Rodolfo A. Reducing Fertility in Developing Countries: A Review of Determinants and Policy Levers. World Bank Staff Working Paper no. 680.

Bulatao, Rodolfo A. and Anne Elwan. Fertility and Mortality Transition in Developing Countries: Patterns, Projections, and Interdependence. World Bank Staff Working Paper no. 681.

Cain, Mead. Women's Status and Fertility in Developing Countries: Son Preference and Economic Security. World Bank Staff Working Paper no. 682.

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Trussell, James and Anne R. Pebley. The Potential Impact of Changes in Fertility on Infant, Child, and Maternal Mortality. World Bank Staff Working Paper no. 698.

Zachariah, K.C. and Sulekha Patel. Determinants of Fertility Decline in India: An Analysis. World Bank Staff Working Paper no. 699.

Zachariah, K.C. The Anomoly of the Fertility Decline in India's Kerala State: A Field Investigation. World Bank Staff Working Paper no. 700.

Abstract

Lowering fertility will require both a reduction in desired family size and provision of family planning services that respond to clients' needs. This paper addresses the second issue--how programs can be more effective in meeting clients' needs.

The World Fertility Survey and the Contraceptive Prevalence Survey found sizable groups of women with "unmet need" for contraception--that is, women who reported wanting to space or limit births but who were not using a contraceptive method. Investigators have also found evidence of unmet need among other groups, including adolescents and men. The gap between fertility preferences and contraceptive behavior is explained in terms of the objective and subjective "costs" of fertility regulation to people, including: the cost of finding out about contraception and where it can be obtained (information costs); the time and money to travel to an outlet (travel costs); the cost of purchase; the physical, psychological and monetary costs of side effects; and the stress provoked by social disapproval of contraception. For some couples who ideally would like to prevent a birth, these represent a greater burden than the cost of an additional child.

Public and private family planning programs in many parts of the developing world have succeeded in reducing the costs of fertility regulation to clients through innovations in service delivery. The paper examines the most important strategies of the past decade: better access to services through trained fieldworkers who distribute contraceptives directly to households, social marketing programs that increase client access to supplies from a diverse group of outlets, improved information about contraception, availability of an ever-greater variety of methods, follow-up services for contraceptive acceptors, and policies to enhance the social acceptability of contraception.

The persistence of unmet need in many countries calls for more research into the reasons for unmet need and the cost-effectiveness of service innovations to satisfy it.

Acknowledgments

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Condensé

Un abaissement de la fécondité exige à la fois une réduction du nombre d'enfants souhaité et la fourniture de services de planning familial répondant aux besoins des clients. Ce document traite du second point, à savoir de la manière dont les programmes peuvent mieux répondre aux besoins des clients.

D'après les résultats de l'Enquête mondiale sur la fécondité et de l'Enquête sur la prévalence de la contraception, il existe des groupes importants de femmes qui ont un besoin non satisfait de contraception, c'est-à-dire de femmes qui souhaiteraient espacer ou réduire les naissances, mais qui n'utilisent pas de méthode contraceptive. Ces enquêtes ont également révélé un besoin non satisfait parmi d'autres groupes, notamment les adolescents et les hommes. L'écart entre les préférences et le comportement en matière de fécondité s'explique par les "coûts" objectifs et subjectifs que représente un contrôle des naissances, en particulier : les coûts d'information, puisqu'il faut se renseigner sur les moyens de contraception et la façon de se les procurer; les coûts de déplacement, en temps et en argent, nécessaires pour les obtenir; le coût d'achat; les coûts physiques, psychologiques et monétaires des effets secondaires; et la tension provoquée par le fait que la collectivité n'approuve pas le recours à la contraception. Pour certains couples qui, idéalement, aimeraient empêcher une naissance, ces coûts représentent une charge plus lourde qu'un enfant supplémentaire.

Dans bien des régions du monde en développement, les programmes publics et privés de planning familial ont réussi, grâce à des innovations dans les prestations de service, à réduire les coûts auxquels la régulation des naissances expose les clients. Le document examine les stratégies les plus importantes adoptées depuis dix ans : amélioration de l'accès aux services par la distribution directe de contraceptifs aux ménages, faite par des animateurs qualifiés, mise en place de programmes sociaux de vente qui facilitent l'accès des clients aux fournitures en leur offrant des points de vente variés, amélioration de l'information sur la contraception, découverte d'un nombre sans cesse croissant de méthodes de contraception, suivi des acceptants, et mesures visant à rendre la contraception plus acceptable du point de vue social.

L'existence, dans beaucoup de pays, d'un besoin non satisfait impose des travaux de recherche sur les raisons de ce besoin et sur la rentabilité d'innovations qui permettraient d'y répondre.

EXTRACTO

La reducción de la fecundidad exigirá tanto la disminución del tamaño de la familia que se desea como la prestación de servicios de planificación familiar que respondan a las necesidades de los clientes. En este trabajo se analiza la segunda cuestión: la forma en que puede incrementarse la eficacia con que los programas atienden las necesidades de los clientes.

Los resultados de la Encuesta Mundial de Fecundidad y de la Encuesta de Prevalencia del Uso de Anticonceptivos revelan la existencia de importantes grupos de mujeres que tenían una "necesidad insatisfecha" de anticonceptivos, es decir, grupos de mujeres que deseaban espaciar o limitar los nacimientos, pero que no usaban ningún método anticonceptivo. Los investigadores también han encontrado indicios de que en otros grupos, incluidos los adolescentes y los hombres, hay una necesidad insatisfecha semejante. La diferencia entre las preferencias en materia de fecundidad y la actuación en relación con los anticonceptivos se explica en términos de los "costos" objetivos y subjetivos que la regulación de la fecundidad entraña para las personas, entre ellos el costo de buscar información sobre métodos anticonceptivos y averiguar dónde pueden obtenerse esos servicios (costos de la información); el tiempo y dinero que toma el desplazamiento hasta el lugar donde se ofrecen los servicios (costos de viaje); el costo de adquirir los anticonceptivos; el costo físico, psicológico y monetario de los efectos secundarios, y la tensión provocada por la desaprobación social del uso de anticonceptivos. Para muchas parejas que idealmente desearían evitar un nacimiento, estos costos constituyen una carga más pesada que el costo de tener otro hijo.

En muchas partes del mundo en desarrollo, los programas públicos y privados de planificación familiar han logrado reducir el costo que la regulación de la fecundidad representa para los clientes implantando innovaciones en el suministro de los servicios. En este trabajo se pasa revista a las estrategias más importantes que se han utilizado en el pasado decenio: el mejoramiento del acceso a los servicios mediante el uso de agentes capacitados sobre el terreno para distribuir anticonceptivos directamente a los hogares, programas de comercialización social que aumentan el acceso de los clientes a suministros en una amplia gama de lugares de distribución, la divulgación de mejor información sobre los anticonceptivos, la disponibilidad de una variedad cada vez mayor de métodos, los servicios de seguimiento a los aceptantes y la aplicación de políticas orientadas a incrementar el grado en que los métodos anticonceptivos se consideran socialmente aceptables.

La prevalencia de una necesidad insatisfecha en muchos países revela la necesidad de realizar más investigaciones sobre las causas de esa situación y sobre el grado en que son eficaces en función de los costos las innovaciones en los servicios encaminadas a satisfacer esa necesidad.

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I. Introduction

The governments of some 85 developing countries, comprising more than 90 percent of the population of the developing world, provide some type of public support for family planning services. They subsidize family planning services to promote any of at least three social objectives: to reduce population growth; to improve family health; and to guarantee that all couples are able to exercise a basic right to determine the number and timing of their children. At least 42 countries, comprising more than three-quarters of the population of developing countries, have adopted public policies to reduce population growth. These are the countries with the most vigorous family planning programs (Lapham and Mauldin 1984).

But couples--men and women--have their own reasons for using family planning and for having the number of children that they do when they do --reasons that rarely have any bearing on social concerns about overpopulation. Their reasons are personal and varied: to avoid an illegitimate birth; to take advantage of schooling or employment opportunities; to await a better economic climate; to prevent more children than can be supported; to be able to invest in the "quality" of a small family; to ensure the good health of mothers and children.

And potential users of family planning are an incredibly diverse lot. They are men and women of reproductive age, roughly 15-49 for women --older for men. They may be unmarried, engaged, or married. They come from all social classes, backgrounds, and locations: the poor, the rich, the uneducated and the educated, urban and rural residents, of different ethnic and linguistic groups. Some are already using a method of contraception; others have tried but discontinued; and still others have never tried a

method. In some remote areas, potential clients are unaware that family planning services exist, or of the possibility of limiting or spacing births. Most important, the reproductive goals of potential clients vary: some are trying to conceive; others would like to delay a birth; and still others would like to cease childbearing altogether.

Public programs to reduce fertility seek to reduce the demand for children, to delay childbearing, and to maximize contraceptive use. But the success of family planning programs ultimately hinges on their ability to meet the individual needs of a spectrum of potential clients. Regardless of how efficient and timely family planning services are provided, if potential clients do not accept contraception and if they do not practice it consistently and effectively, the objectives of neither the program nor the clients will be met.

The reliance of the performance of family planning programs on the cooperation and satisfaction of clients presents a special challenge for service providers. First, family planning services must be flexible; they must be acceptable to clients of different cultures, ages, parities, socioeconomic backgrounds, and geographic locations. They may also have to be acceptable to spouses and other relatives who influence reproductive behavior. Staff must be sensitive to the individual needs of clients and familiar with local customs and beliefs. Programs may not be able to rely on a single "model" of service delivery or program design; they may have to use several.

Second, the success of family planning programs depends not only on acceptance of contraception, but its use over a long period: couples who have completed their families at age 25 may have to contracept for 20 years. Few medical therapies, curative or preventive, need be continued over such an

extended period. And because contraceptive technology is preventive (successful practice is rewarded by a "nonevent," the failure to get pregnant), users of contraception do not receive much ongoing, visible reinforcement for their behavior. At the same time, many users experience medical side effects as a direct result of practicing contraception. While the side effects of medical therapies are offset by the alleviation of symptoms of an illness, otherwise healthy contraceptors experience side effects with little visible positive compensation. Family planning clients require continued reassurance, treatment for side effects, convenient resupply, and alternative methods. Managers need information not only on new acceptors, but continuing users, dropouts, and non-participants to monitor program performance.

Finally, management must take into account the very personal and sensitive nature of family planning programs. Open discussion of sexuality and intimate family life is taboo in many cultures, and may not even occur between spouses (Bulatao 1982, Jongmans 1974). This means that program staff must be especially discreet and that female staff are critical. Services must be promoted in such a way that they are not offensive to couples' sense of privacy.

Client satisfaction has always been central to the success of family planning programs, but in their initial stages programs gave precedence to logistic and organizational concerns. Contraceptive services were mainly provided out of fixed health clinics, much as any other medical service. Programs promoted one or two highly effective methods--initially the IUD, then sterilization and the pill. Acceptance targets were set and in many countries incentives were offered to recruiters and clients for acceptance. In Indonesia in the early 1970s, for example, clinic-based recruiters were paid

US$0.50 for an IUD acceptor, $0.25 for a pill acceptor, and $0.13 for an acceptor of a traditional method (Sullivan and others 1976, p. 188). (Such incentives remain central features of national family planning programs in South Asia.) Program impact was evaluated in terms of inputs, outputs, and acceptance figures. Because of the emphasis on getting people to accept a method, follow-up services were minimal and the potential side effects of methods were often not explained to clients for fear that they would not accept. In fact, providers themselves were often unaware of the proper use, contraindications, and side effects of many of the methods offered (Warwick 1982). The assumptions seemed to be that once potential clients knew where to obtain contraception, they would try it, and that once clients had tried an effective method, they would use it continuously and effectively (Bruce 1980).

But information remained scarce in many areas, and facilities were not accessible to many potential users. Many programs had neglected the varied needs of potential clients. Services in the Philippines, for example, focused on quick and efficient delivery, but "overlooked the economic exigencies, cultural milieu, and individual psychology of its intended clients" (Warwick 1982, p. 19). In the Mexican program, "shyness in discussing sexual matters, female aversion to disrobing before male doctors, discomfort at the brevity and paternalism of contacts with clinic staff, a poor understanding of contraceptives, fears as well as real experience of side effects--all arose from a poor fit between programs and clients" (Ibid., p. 22). Many clients who had been issued contraceptives never used them, and many who had tried them discontinued use within a short time. A review of continuation statistics for research projects and national programs found that after 12 months, only 70-80 percent of IUD acceptors and 50-60 percent of pill acceptors continued to use these methods (Kreager 1977). Most discontinuation

of the IUD was due to medical side effects. Discontinuation of the pill was due mainly to side effects and unspecified "personal" reasons. In fact, many programs were plagued by rumors of side effects, rumors which discouraged acceptance and continuation. In India and Singapore, actual and rumored side effects undermined the IUD, and acceptance plummeted (Mauldin 1978, Cassen 1978). There were marked differences across countries and regions, however. IUD continuation rates in Taiwan, China, were similar to those in India, but the method continued to attract acceptors (Mauldin 1978, Cassen 1978). And in Indonesia, IUD continuation was relatively high--85-90 percent at 12 months (Kreager 1977, Sullivan and others 1974).

These experiences produced a more widespread appreciation of the need to manage side effects--real or anticipated. But side effects were not the only reason for discontinuation; unspecific "personal" and "other" reasons were often even more important. Family planning services in many areas--while successful in meeting the needs of some highly motivated couples--had been unsuccessful in satisfying the "unmet need" for contraception of many other potential clients, that is, people who wanted to space or limit births but had never used contraception or had stopped using it. As Cassen (1978) noted:

> "People speak of the slow progress of family planning in India prior to 1976 as if it demonstrated the absence of any widespread desire for family limitation; whereas what had in fact been demonstrated was the low level of acceptability of the IUD and vasectomy as offered within the Government's programme." (p. 173, his emphasis)

* * * * * * * * * * * *

Increasing contraceptive use will require both a reduction in desired family size and family planning services that are more responsive to the needs of clients. This paper addresses the second issue--how programs can be more effective in meeting clients' needs. There are three parts. The first part

reviews the demand for contraception--in terms of current use and unmet need--and the "costs" of practicing contraception from the client's perspective. The second examines programmatic strategies to reduce these costs to clients and to satisfy unmet need. These strategies include improved access to contraceptive services; better service quality--in terms of method mix, information, and follow-up services; and improving the social acceptability of services. The third and concluding section raises the issue of the Cost-effectiveness of these strategies, a subject that merits further investigation.

II. The Demand for Contraception

Intensified family planning activities in developing countries have brought about widespread, sometimes rapid, gains in contraceptive use in the last decade. In all of the countries in East Asia and most in Latin America for which two or more survey-based estimates are available, contraceptive prevalence--the percent of married women of childbearing age using a contraceptive method 1/--increased by an average of at least 2 percentage points per year between surveys (see Table 1). In Thailand, contraceptive use quadrupled, from about 15 percent of eligible women in 1970 to 59 percent in 1981. Since these surveys, even more progress is evident. About half of married women of reproductive age in Indonesia were using a method in 1983, compared to 18 percent in 1976, soon after the national family planning

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1/ Methods generally included are male and female sterilization, IUD, oral contraceptives, injectable contraceptives, condom, diaphragm, spermicides, withdrawal, and periodic abstinence. Among these, the first eight are often referred to as "modern" or "more effective" methods, and the last two as "traditional" or "less effective" methods.

Table 1 Trends in percentage of married women of reproductive age using contraception: developing countries with two or more survey-based estimates

Country	Marital status	age	Earlier year		Recent year		Average annual change a/
			Year	Percent	Year	Percent	
Sub-Saharan Africa							
Kenya (rural)	EM	15-49	1967	6	1977/78	8	0.2
Latin America and Caribbean							
Colombia	CM	15-49	1976	43	1980	48	1.3
Costa Rica	CM	20-49	1976	64	1981	66	0.4
Dominican Rep.	CM	15-49	1975	32	1980	42	2.2
El Salvador	CM	15-44	1975	22	1978	34	3.7
Jamaica b/	CM	15-44	1975/76	40	1979	55	4.2
Mexico	CM	15-49	1976	30	1979	39	2.8
Panama b/	CM	20-44	1976	52	1979	64	3.3
Paraguay b/	CM	15-44	1977	29	1979	32	2.0
Peru	CM	15-49	1977/78	31	1981	41	2.4
Trinidad & Tobago	CM	15-44	1970	44	1977	54	1.6
East Asia							
Hong Kong	CM	15-45	1967	42	1977	72 d/	3.0
Indonesia	CM	15-49	1976	18	1980	27 e/	2.0
Korea, Rep. of	CM	15-44	1967	20	1979	55	2.9
Malaysia (Pen.)	CM	15-44	1966/67	9	1974/75	35	3.4
Philippines	CM	15-44	1968	15	1978	39	2.4
Singapore	CM	15-44	1973	60	1977	71	3.2
Thailand	CM	15-44	1969/70	15	1981	59	3.8
South Asia							
Bangladesh	CM	15-49	1976	8	1979	13	1.4
India	-	20-39	1970	12	1982 f/	24	1.0
Nepal	CM	15-49	1976	2	1981	7	0.9
Pakistan	CM	15-49	1968	6	1975	5	-0.1
Middle East & North Africa							
Egypt	CM	15-49	1974/75	26	1980	24	-0.5
Jordan	CM	15-49	1972	22	1976	25	0.7
Tunisia	EM	15-49	1978	30	1980	27	-1.7
Turkey	CM	15-44	1968	32	1978	40	0.8

CM: currently married
EM: ever married

a. Average annual change computed as the difference in percentage using contraception divided by the number of years between surveys. When possible the difference in percentage using contraception was computed before rounding, and note was taken of the timing of the surveys within the year when computing the difference in dates.
b. Excluding use of douche, abstinence, and folk methods.
c. Earlier figure is based on ever married women; later based on currently married women. Trend is probably overstated.
d. Ages 15-49.
e. Based on census (not survey). Use may be understated; a 1979 survey showed a level of 31 percent.
f. Sources: Nortman (1981) and Zachariah (1983). Second figure is probably ages 15-44.

Source: United Nations, World Population Trends and Policies--1983 Monitoring Report (New York, forthcoming). Table 2.27.

program was launched. The Mexican family planning program was initiated in 1973; nearly half of all women of reproductive age women in Mexico were using a method in 1982, compared to only 30 percent in 1976. In China, Costa Rica, Hong Kong, Panama, and Singapore, about 70 percent or more of women of childbearing age are using contraception, the level of prevalence found in developed countries.

Despite these successes, overall contraceptive use is still lower than 50 percent in some East Asian and in most Latin American countries. In India, 28 percent of eligible couples are using modern contraceptive methods, and in Bangladesh, Nepal, and Pakistan, fewer than 20 percent are using either modern or traditional methods. In sub-Saharan Africa, fewer than 10 percent of married women of childbearing age use any method of contraception. Prevalence has remained unchanged in Egypt, Kenya, and Tunisia, despite public programs.

What explains low prevalence and slow progress in many areas? Much of the answer lies with the high demand for children still found in many of these countries. The World Fertility Survey found a desired family size of 7.2 children in Kenya, 8.8 in Senegal, and 6.3 in Jordan. Even in Latin America women generally want more than four children in their completed families (Lightbourne and Singh 1982, Table 15). Major increases in contraceptive prevalence will probably occur through policies which act to reduce the demand for children.

But there is also evidence that family planning programs are not achieving their full potential, even within the existing levels of demand. In many countries, a large proportion of married women who want no more children are not using contraception. The World Fertility Survey (WFS) and Contraceptive Prevalence Survey (CPS) found that one-fifth to three-quarters

of married women of reproductive age want no more children in the sixteen countries in Table 2. The percentage who want no more children exceeds the percentage using contraception in all but one country. And in countries where women were asked whether they would like to space a birth, 4-27 percent said yes.

One of the reasons for the discrepancy between women's stated fertility intentions and contraceptive use is that many who want to space or limit births are not "exposed" to the risk of pregnancy. That is, they are pregnant, breastfeeding, infecund, or separated from their spouses, for example. But, even when this is taken into account, there are important segments who want to space or limit births and are at risk of getting pregnant, but are not using contraception.

Boulier (1984) constructed high and low estimates of "unmet need" for contraception to limit and to space births for 36 countries based on WFS and CPS data. The "low" estimate includes women who want no more children (or want to space births), who are exposed to the risk of pregnancy, and who are not using any method of contraception. The "high" estimate of unmet need includes, in addition, women who are breastfeeding within a year of a birth and women using less effective contraceptive methods, such as withdrawal, rhythm, douche, or abstinence. By the low estimate, 10 percent or more of eligible women in Bangladesh, Egypt, Mexico, Nepal, Peru, and Thailand have unmet need for contraception to limit births (Table 2). By the high estimate, all but two countries in Table 2 fall into this category. Even in countries where contraceptive prevalence is already high, such as in Colombia, Korea, and Thailand, as many as 17-24 percent of married women aged 15-49 have unmet need for contraception to limit births. Bangladesh and Mexico have the highest unmet need for spacing births--13-14 percent of married women aged

Table 2 Demand for contraception: Current use and unmet need, selected countries
(Percent of married women 15-49)

	Year	Current use	Want no more children	Unmet need for limiting		Want to delay a birth	Unmet need for spacing	
				high	low		high	low
Africa								
Ghana	1979-80	10	20	8	5	..	..	..
Kenya	1977-80	7	25	10	6	..	..	..
Sudan	1979	5	27	9	6	..	..	..
Middle East								
Egypt	1980	24	58	22	12	..	..	..
Syria	1978	20	44	15	7	..	..	..
Asia								
Bangladesh	1979	13	50	28	25	19	14	13
Korea	1979	54	77	23	..	4	3	..
Nepal	1981	7	41	27	22	9	8	6
Thailand	1981	59	68	17	13	19	8	5
Latin America and Caribbean								
Barbados	1981	46	53	19	..	..	..	..
Colombia	1980	49	69	24	7	9	3	1
Costa Rica	1981	65	55	11	6	27	8	3
Honduras	1981	27	48	21	9	15	9	2
Mexico	1978	39*	61	22	14	18	14	13
Paraguay	1979	36	39	17	9	..	..	..
Peru	1981	41	75	41	13	8	5	2

.. Not available
* 1979 figure.

Source: CPS and WFS data tapes; for unmet need, Boulier 1984.

15-49. In the African countries unmet need for limiting is low, due in large part to the high demand for children and to high reported "nonexposure" among women. Spacing questions, unfortunately, were not asked; a potentially large group of African women might be affected (see Page and Lesthaege 1981). In a similar exercise, Westhoff and Pebley (1981) found an unmet need for contraception to limit births in 18 developing countries ranging from a mean of 7 percent to 40 percent of married women of reproductive age, depending on the definition of unmet need.

These estimates do not measure unmet need for contraception among all groups with potential need, however. They are based on responses of women of reproductive age who are married or in stable unions; unmet need among other client groups, such as married men and unmarried couples is not included. Large numbers of unmarried American teenagers, for example, are at risk of unwanted pregnancy (Furstenberg et al 1983). Unmet need estimates are also made at a point in time. Women who are currently pregnant are not included in estimates, but some are not pregnant by choice; they may have had unmet need for contraception in the past that led to an unwanted pregnancy. Others who are currently pregnant would like to space or limit births following the expected birth, but are also not included since their need for contraception is in the future. Nortman (1982) calculated that over a one-year period from the time of the Contraceptive Prevalence Surveys, an average of 34 percent of fecund married women of reproductive age in six developing countries would have unmet need for contraception to limit or space births.

The existence of unmet need suggests that present services are not adequate for many potential clients. In some countries, high rates of contraceptive discontinuation for reasons other than planned pregnancy suggest the same conclusion. According to the results of the CPS and WFS, 6-30

percent of married women of reproductive age in 32 countries had tried contraception but were no longer using it at the time of the survey (see Table 3, col. 1). Among discontinuers, some were currently pregnant, infecund, or otherwise not exposed. Eight percent of all married women of childbearing age in Guyana, Korea, and Trinidad and Tobago, 9 percent in Jamaica, and 10 percent in Barbados had discontinued contraception even though they wanted no more children and considered themselves exposed to the risk of pregnancy. In ten countries, this group of discontinuers with unmet need represent a quarter or more of all discontinuers (column 3). Discontinuers are an important subset of people with unmet need, since they were once motivated enough to accept contraception and are better informed of the nature of services. Satisfying this unmet need among discontinuers would increase contraceptive use proportionately by 20 percent or more in eight countries (column 4). (Additional tables on unmet need among discontinuers are in Annex A.)

Unmet need is not a static concept, however. If the demand for limiting and spacing births increases faster than the availability of adequate contraceptive services, unmet need will increase. And service expansion can create greater need as more people become aware of the possibility and benefits of timing or limiting births.

The "Costs" of Fertility Regulation to Clients

From the perspective of potential clients, fertility regulation is costly, not only in terms of purchasing contraceptives, but in terms of the money and time of traveling to an outlet or the psychological and physical distress of side effects (Bulatao 1982, Bogue 1983). These and other monetary, psychological, physical, and time-related "costs" of fertility regulation for some couples may be a greater burden than the net costs of an additional child. So even if a couple would ideally prefer to postpone or prevent a pregnancy, they will not use contraception.

Table 3 Discontinuation of contraception, recent surveys

Country	Percentage of married women aged 15-49: Used contraception but are not current users ("discontinuers") (1)	Percentage of married women aged 15-49: Discontinued use, exposed [a] and want no more children (2)	Percentage of all discontinuers who are exposed and want no more children (2 divided by 1) (3)	Discontinuers who are exposed and want no more children (2), as a percentage of current users (4)
Africa				
Cameroon (1978)	6	(.)	1	2
Ghana (1979/80)	30	2	7	23
Kenya (1977/78)	25	2	7	24
Lesotho (1977)	18	2	10	33
Sudan (1979)	8	1	8	15
Middle East and North Africa				
Egypt (1980)	17	4	25	18
Jordan (1976)	22	3	12	10
Syria (1978)	14	1	9	6
Tunisia (1978)	15	3	18	9
South Asia				
Bangladesh (1979)	9	3	30	21
Nepal (1981)	2	(.)	8	2
Pakistan (1975)	5	2	43	42
Sri Lanka (1975)	14	4	29	12
East Asia				
Indonesia (1976)	12	2	16	7
Korea (1979)	24	8	33	16
Philippines (1978)	23	4	19	12
Thailand (1981)	21	5	26	9
Latin America and Caribbean				
Barbados (1981)	28	10	36	21
Colombia (1980)	20	4	22	9
Costa Rica (1980)	23	3	14	5
Dominican Republic (1975)	18	3	17	8
Ecuador (1979)	20	4	20	12
Guyana (1975)	22	8	34	22
Haiti (1977)	17	3	15	14
Honduras (1981)	15	2	10	6
Jamaica (1975/76)	26	9	36	24
Mexico (1978)	15	3	20	8
Panama (1976)	21	4	17	7
Peru (1981)	20	3	14	7
Paraguay (1979)	21	3	12	7
Trinidad & Tobago (1977)	27	8	28	14
Venezuela (1977)	20	4	19	8

a. Not pregnant or infecund.

Source: WFS and CPS data tapes.

The costs of fertility regulation to clients include:

Information--the cost of finding out about contraceptive services, where they can be obtained, and how they are properly used. In communities where modern family planning has never been provided, there may be no evident demand because potential clients are not aware of the benefits of the service, of smaller families, or of longer childspacing intervals, or that such services exist. In an analysis of WFS data for 7 countries, Pebley and Brackett (1982) found that knowledge of a contraceptive outlet has a significant and positive effect on contraceptive use, even when factors such a age, parity, education, husband's occupation, residence, and fertility desires are held constant. Potential users may also face information costs about methods unknown to them or sources of more than one method. The cost of inadequate information on the proper use or side effects of methods can be measured in terms of the risk of method failure and the psychic distress from side effects and an unplanned pregnancy.

Travel--the cost in money and in time of getting to an outlet and obtaining services. According to the WFS, women who know of an outlet less than 30 minutes away are more likely to practice contraception in both urban and rural areas of Korea, Malaysia, Paraguay, and Venezuela, and in rural areas of Colombia, Mexico, and the Philippines than women who know of outlets at greater distances (Lightbourne and Singh 1982, Table 13). The objective (actual) distance to an outlet is positively related to contraceptive use, but the largest differentials in contraceptive use are between those who are aware of an outlet at any perceived distance and those who are not aware of an outlet (Tsui and others 1981, Pebley and Brackett 1982). That is, once an outlet is known, distance doesn't seem to make much difference in use.

Various method characteristics can also influence travel costs. For sterilization and the IUD, travel costs may be incurred only once or infrequently for checkups, but because these methods are often reliant on medical services, outlets may be far away. Other methods, such as the pill, condoms, and injectables, require periodic resupply and more frequent travel. When travel time exceeds one hour, distance is a constraint for the use of these so-called "supply" methods; as the time to an outlet of supply methods increases, their use falls (Cornelius and Novak 1983). Clinic methods are less sensitive to distance, except when distances are very great (Ibid).

Purchase--the monetary cost of supplies (e.g., condoms, pills, injections) or services (e.g., sterilization, IUD insertion and check-ups). Most public family planning programs provide services free or at greatly reduced cost. Costs from private sources can be quite high, however, and beyond the means of many poor people. The average yearly costs of seven methods from private sources in 20 developing countries ranged from US$23-42 per year and represented 1-5 percent of per capita income (Schearer 1983, Tables 1 and 4, pp. 595, 599). The price elasticity of contraception has not been closely studied, however. Schearer (1983) argues that the ability and willingness to pay modest fees for contraception in some countries may be underestimated: large numbers of users purchase contraceptives from more costly private sources; price has not been found to be an important reason for nonuse in some experiments; and the response to social marketing programs in many countries has been great. A contraceptive distribution scheme in rural Egypt found no difference in contraceptive use among women who were charged for resupply of pills and those who were not. After 9 months of the project, prevalence in both groups was 26.9 percent (Gadalla and others 1980, p. 111). In fact, in some instances, the effect of monetary cost of purchase on demand

may be positive. Individuals may place higher value on services for which there is some charge, however low, than if services are free. This hypothesis requires further empirical testing.

Health Risks--the physical and psychological distres associated with contraceptive side effects. Side effects can also restrict the activities of users--objectively or because of cultural interpretations. In some cultures, for example, women are forbidden from praying or performing household chores (such as cooking) while menstruating. Breakthrough bleeding sometimes experienced with the IUD is a major inconvenience for these women. Side effects which do occur, whether psychological or physiological in origin, must be endured or treated. This may entail purchase of additional drugs and medical care or acceptance of another method, and the associated travel costs.

The risk of death from contraception is extremely low--far lower than the risks of pregnancy and childbirth in developing countries. The fear of serious, life-threatening side effects is an important psychological cost for current and potential users, however. Programs have been undermined by widespread rumors of rare or unproved side effects. In some countries, for example, it is thought that the IUD can migrate throughout the body, to the lungs, heart, and brain, and that children can be born with the devices stuck in their bodies. Rumors which circulate about the pill often implicate it as a cause of cancer, and in Mexico the pill is believed to cause birth defects in children conceived after the method is discontinued (Schearer 1983, Warwick 1982). Often overlooked are the considerable health benefits of family planning to mothers and children (see Annex B).

Social Disapproval. Fertility regulation may entail considerable psychological costs for people for whom contraception violates personal

beliefs, for whom it is likely to create marital disharmony, and in the case that contraception is not socially, culturally, or religiously approved of in the community (Bulatao 1982, Warwick 1982). In many societies there are sanctions for those who don't adhere to cultural norms on childbearing. Infertility is a cause of dissolution of marriage among the Bontok of Northern Luzon, the Philippines. In the Cavite region near Manila, failure to produce children brings ridicule and insinuations of impotence and homosexuality to the husband (Warwick 1982, p. 110).

Other Costs. Bulatao (1982) suggests several costs related to method attributes, including uncertain effectiveness in preventing pregnancy and the inconvenience of use. Since methods such as the pill, condom, and rhythm, depend on behavioral modification, their use-effectiveness may fall substantially below theoretical effectiveness. Use of oral contraceptives, for example, requires clients to remember to take a pill at the same time every day. Forgetting to take a pill at any time during the month can produce ovulation and unintended pregnancy. The inconvenience of methods such as the condom, diaphragm, and spermicides, which must be used just prior to intercourse, increases the risk of ineffective or inconsistent use. Some methods require means of storage (diaphragm) or disposal (condom), or genital contact in their use, which may violate cultural norms.

One could also postulate a set of facility or provider-specific factors, such as the attitude of personnel, clinic hours, waiting time, and the physical condition of the clinic or pharmacy, that affect psychological and time costs of program participation. Kreager (1977) found no studies to support the effect of these factors on continuation, but dissatisfaction with clinic-specific factors may be difficult to capture in surveys or through follow-up. A survey of client attitudes toward family planning clinic

services in Bogota, Colombia, showed a high level of satisfaction by almost all users when asked to rate the program in general. But on further probing, the privacy of consultations, completeness of instruction for methods, and the convenience of clinic hours were found lacking by significant proportions of respondents (Bailey, Measham, and Umana 1976). Unless clients are probed for specifics, they may tend to respond affirmatively to interviewers. Focus-group interviews in urban Indonesia revealed general dissatisfaction with public health and family planning clinics due to crowding, long waiting time, and staff attitudes (Suyono and others 1981, p. 441). A survey of family planning clients in Detroit, USA, found that waiting time and degree of comfort were not correlated with overall client satisfaction, but that the quality of care from doctors and nurses was (Sung 1977).

Reasons for Nonuse of Contraception

Contraceptive Prevalence Surveys conducted in the last five years asked married women of reproductive age who were not using contraception the most important reason for nonuse. The reasons cited are an important indicator of the types of costs perceived as most relevant to nonusers in different countries, and point to the most important avenues for program intervention.

Table 4 presents the reasons for nonuse of contraception for married women 15-49 in 11 countries from CPS data. Grouped together, the most important reasons for nonuse in all countries are not related to contraception --reasons such as nonexposure (subfecund, sexually inactive, pregnant, or lactating less than one year) and desiring pregnancy. These account for 70-86 percent of nonusers, with the exception of Barbados (45 percent) and Bangladesh (63 percent).

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Table 4 Reasons for nonuse of contraception, by use status

	Percent of married women of childbearing age not using contraception	Reason for nonuse (percent distribution)										
		Not related to contraception			Related to contraception							Not stated
		Not exposed a/	Wants child	Subtotal	No known source/method	Side effects	Husband opposes	Religion	Cost	Other	Sub-total	
East Asia												
Korea, 1979												
Discontinuers	24	70	10	80	0	4	..	..	..	16	20	(.)
Never users	26	67	21	88	1	(.)	..	..	..	11	11	(.)
Total, nonusers	50	68	16	84	1	2	..	..	..	14	16	(.)
Thailand, 1981												
Discontinuers	21	72	13	85	(.)	9	(.)	(.)	(.)	5	14	1
Never users	22	75	12	87	1	7	1	(.)	(.)	4	13	1
Total, nonusers	43	73	13	86	1	8	1	(.)	(.)	4	13	1
South Asia												
Bangladesh, 1979												
Discontinuers	9	49	10	59	(.)	25	2	2	..	12	41	(.)
Never users	78	34	29	63	5	6	7	7	..	12	37	(.)
Total, nonusers	87	36	27	63	5	8	6	6	..	12	37	(.)
Nepal, 1981												
Discontinuers	2	81	8	89	3	..	..	..	..	8	11	(.)
Never users	91	62	10	72	27	..	..	..	..	2	28	(.)
Total, nonusers	93	62	10	72	26	..	..	..	..	2	28	(.)
Latin America and Caribbean												
Barbados, 1981												
Discontinuers	28	40	4	44	1	18	1	1	..	21	41	15
Never users	72	40	5	45	9	8	(.)	3	..	18	38	17
Total, nonusers	54	40	5	45	5	13	1	2	..	20	40	16
Colombia, 1980												
Discontinuers	20	65	11	77	0	14	2	(.)	..	7	23	(.)
Never users	31	57	11	68	7	3	4	2	..	15	32	0
Total, nonusers	51	61	11	71	5	8	3	1	..	12	29	(.)
Costa Rica, 1980												
Discontinuers	23	61	14	75	0	8	2	1	2	13	26	..
Never users	12	56	9	65	1	2	4	2	1	35	25	..
Total, nonusers	35	59	12	71	(.)	5	3	2	2	18	29	..
Honduras, 1981												
Discontinuers	15	75	8	83	0	8	2	(.)	(.)	6	17	(.)
Never users	58	68	7	75	5	6	2	2	1	10	25	(.)
Total, nonusers	73	69	7	76	4	6	2	2	1	9	23	(.)
Mexico, 1978												
Discontinuers	15	68	6	74	1	10	..	..	..	3	14	12
Never users	45	64	5	68	16	2	..	..	..	1	19	13
Total, nonusers	60	65	5	70	12	4	..	..	..	2	18	12
Peru, 1981												
Discontinuers	20	85	2	87	0	3	..	2	(.)	8	14	(.)
Never users	40	78	2	80	11	1	..	2	(.)	7	20	0
Total, nonusers	60	80	2	82	7	2	..	2	(.)	7	18	(.)

.. not available.
(.) less than half of one percent
a. Pregnant, not sexually active, infecund.

Source: CPS data tapes.

Of the identifiable reasons that relate to contraception, the fear of or experience with side effects is the most commonly cited reason in six countries, cited by 2-13 percent of all nonusers. Side effects are considerably more important among discontinuers; in Bangladesh, Barbados, Colombia, and Honduras, 10-25 percent of discontinuers cited this reason as the most important. Follow-up studies of contraceptive acceptors show that reasons for discontinuation are also related to the method used. Pill users are more likely to discontinue for a desired pregnancy, side effects, and personal reasons, while IUD users are more likely to have the device removed because of side effects. Spontaneous expulsion of the IUD is also an important reason for discontinuation (Kreager 1977, Laing 1974). In Java-Bali, for example, pill users are more likely to discontinue because of desired pregnancy, health reasons, and physical/emotional reasons than users of other methods (Teachman and others 1980, Table 9). In Mojokerto Regency (Java), side effects and personal reasons (cost, inconvenience, lack of need, husband's objections, not stated) accounted for three fourths of discontinuation of the pill (Sullivan and others 1976, Table 7).

Lack of knowledge of methods or sources was the most frequently cited reason for nonuse in Nepal, Mexico, and Peru; virtually all of these nonusers had never used contraception. Religious reasons and opposition of husband are not the most important in any of the countries in Table 4.

This information on reasons for nonuse is indicative of the types of costs which limit contraceptive use, but not particularly helpful in sorting out the influence of any particular reason. The CPS questionnaire requested the one "most important" reason for nonuse, while in fact many reasons may apply. Reducing any one of these "costs", therefore, may merely shift the distribution of responses rather than reduce nonuse. The largest single

category of reasons for nonuse related to contraception for 6 of the 10 countries is "other" reasons, and in Barbados and Mexico 16 percent and 12 percent of nonusers, respectively, declined to give a response. "Other" includes nonspecific answers such as "don't like" contraception. These responses may reflect social disapproval and other psychocultural costs which are not easily identified through open-ended questioning. Or they may reflect a demand for children rather than any "costs" of fertility regulation. Reasons such as husband's opposition and religion are also not very specific. The husband may object because he wants more children rather than because he objects to contraception per se. Even if the husband's objection is related to contraception, there is no indication as to the nature of the objection. These responses come from nonusers with different levels of motivation and knowledge of costs. Those who have never tried contraception may be considerably less motivated than those who have tried it and discontinued, and the former are less likely to be familiar with the full costs of use. There is the additional possibility that nonexposure (reasons not related to contraception) has been underestimated, since it was self-reported. Westhoff and Pebley (1981) found that an average of 10 percent of currently married women classified themselves as infecund in 18 countries on the WFS, but by a behavioral measure--"currently married, nonpregnant women who have not used contraceptives for at least five years since their last birth"--an average of 16 percent were infecund. Van Renselaar (1974) suggests, however, that after having had a certain number of children women may wrongly assume that they are infecund (p. 70).

Finally, married women of reproductive age represent an important subset of potential clients, but their reasons may not be reflective of all nonusers. The response of men and of unmarried couples (a large group in some

countries) would be of equal interest. Even among married women, reasons for nonuse vary by the woman's age, the number of living children she has had, and other background characteristics. Desired pregnancy and health reasons are more important reasons for nonuse among younger women and women of lower parity who have discontinued. Among older women of higher parity who have discontinued, non-exposure is a relatively more important reason for nonuse (Teachman and others 1980, Table 9; Nair and Smith 1984).

III. Reducing Costs to Clients

Data on unmet need, the reasons for nonuse of contraception, and contraceptive discontinuation suggest that family planning services in some areas are not meeting the needs of important segments of potential clients. Unmet need is partly the result of the quality and availability of existing services, which impose certain monetary, psychological, physical, and time-related costs on clients. Program strategies to reduce these costs should increase contraceptive prevalence and satisfy unmet need.

At the same time, family planning programs, like programs in other sectors in developing countries, are subject to constraints: inadequate transport, shortage of skilled staff, lack of finance, and so forth. The challenge for managers of family planning programs is to meet individuals' needs within these constraints and, in the long run, to ease these constraints.

This section examines five strategies of family planning programs that lower the "costs" of contraceptive use to clients: improving access; a broader mix of contraceptive methods; better client information; strengthened follow-up services; and enhancing social acceptability of services.

Improving Access

Perhaps the greatest achievement of family planning programs in the past decade has been to make services more accessible to clients, in terms of spreading infomation about methods and outlets and reducing the distance clients must travel. At least 80 percent of currently married women in 23 of 29 developing countries are aware of at least one "efficient" method of contraception (pill, IUD, condom, injectables, sterilization, and female scientific methods), according to the results of the WFS (Lightbourne and Singh 1982, p. 31). Two-thirds or more of married women in Korea, Malaysia, the Philippines, Colombia, Panama, Paraguay, Trinidad and Tobago, and Venezuela know where contraceptives can be obtained (Ibid., p. 37). Family planning methods are well known and available within an hour from home in urban areas of almost all of the countries surveyed. In Thailand and Costa Rica most people in both urban and rural areas are already within an hour of an outlet of contraceptives.

But there are still many countries or regions within countries where information and travel costs are major obstacles to reducing the unmet need of clients. According to CPS results for Piaui State (Brazil) and Guatemala, 15 percent of married women of childbearing age were not using contraception and wanted to use it but were unaware of an outlet (Morris and others 1981). In Nepal, almost half of married women are unaware of a method of contraception and about 15 percent know of a method but not of an outlet (Cornelius and Novak 1983, p. 28). In Honduras, about one fourth of women are either unaware of a method or an outlet of contraception. Access is particularly poor in sub-Saharan African countries, where knowledge of contraception is low and availability in rural areas is extremely limited. One-third to one-half of women surveyed in Lesotho, Senegal, and Sudan were unaware of any method of

contraception (Lightbourne and Singh 1982, p. 31). In Kenya only 42 percent of married women knew of an outlet, and in Lesotho only 27 percent knew (Ibid., p. 37).

For those who know of an outlet in rural areas, distances are often great. In Colombia, Honduras, and Nepal 32, 42, and 62 percent of rural women who know of an outlet live more than one hour away, respectively (Cornelius and Novak 1983, p. 34). These results may understate information and travel costs faced by users, however, as they pertain to only one outlet for one method. Potential users may still face information and travel costs for methods unknown to them.

Public family planning programs have improved access to contraceptive services by increasing the number of outlets through public, private, and commercial channels. Two strategies have been particularly important: "outreach" of public services to underserved areas, communities, and even households; and subsidized commercial distribution of contraceptives. Nongovernmental organizations have also been enlisted to expand access, and have pioneered approaches for reaching underserved groups, such as males and adolescents.

Outreach. A decade ago, most public family planning programs delivered services through fixed facilities, often medical clinics, and relied heavily on medical personnel for service delivery. But because health services were not well established in rural areas and remote regions and because medical personnel were scarce, access to both medical care and family planning was limited. Today, a few large-scale programs have succeeded in extending services outward from fixed facilities into communities:

- Health personnel of all types have been trained to provide many services formerly allocated to physicians and nurses--to prescribe and

resupply pills, administer injections, screen clients for contraindications, make referrals for side effects and other clinical methods, and even insert IUDs.

- Programs have hired trained fieldworkers to deliver services directly to communities and even households. Fieldworkers provide a critical link between fixed facilities and communities. They prescribe and distribute some methods, make referrals for clinical services, and resupply and reassure clients in their own communities and homes. In the Philippines fieldworkers have recruited and supervised local volunteers to supply services. Direct access to households, made possible by fieldworkers, is particularly important in cultures where women are confined to their homes. When women in Marrakech, Morocco, were offered oral contraceptives through home visits, contraceptive prevalence rose from 18 to 43 percent (Carrino 1983). In the Sfax region of Tunisia, household distribution raised the rate from 7 to 18 percent, and in Ferana from 16 to 28 percent (World Bank 1981b, McGuire and others 1982). The contraceptive distribution project in Matlab, Bangladesh, raised contraceptive prevalence from 1.1 to 17.9 percent through simple household distribution of pills and condoms; prevalence rose to only 3.8 percent in control areas (Bhatia and others 1980). To implement household distribution schemes, programs have made efforts to recruit female fieldworkers, since in many areas women cannot discuss such a personal subject with male workers, nor can they be examined or treated by them.

- Local supply depots of pills, condoms, and contraceptive foam have been set up, reducing the costs to communities of resupply. Even clinical methods, such as the IUD and vasectomy, have been brought to remote areas through periodic mobile clinics, such as vasectomy "camps" in India, IUD "safaris" in Indonesia, and mobile vasectomy vans in Thailand.

Outreach programs have considerable advantages for management. Fieldworkers receive lower salaries and take less time to train than do medical personnel. By using fieldworkers for family planning services, medical personnel are freed to spend more time on health care than would otherwise be the case. Family planning fieldworkers have also been trained to provide maternal and child health services that complement family planning. A major advantage of locally recruited fieldworkers is that they are often better aware of local needs and are more acceptable to the community.

But outreach strategies also put greater demands on training, supervision, and logistics. Fieldworkers can be trained quickly, but the quality of training must be high and trainees must have ample opportunity for supervised practice. Periodic in-service training of some type is necessary to maintain service quality. Fieldworkers also require careful supervision as well as good medical backup for treatment of side effects that clients might develop. Supervision must be supportive, aimed not at policing fieldworker activities but at providing advice and support to maximize fieldworker effectiveness. Finally, outreach strategies make great demands on logistics. Supervisors and fieldworkers must travel frequently. Contraceptive supplies must be made available at an increasing number of outlets in remote communities. Finance must be made available for transport of both people and supplies. In other sectors, transport funds are often the first sacrificed when budgets are cut. Family planning outreach is virtually impossible without them.

Social Marketing Programs. A number of governments have used existing commercial distribution systems and retail outlets to sell subsidized contraceptives. India launched the first such "social marketing" scheme in 1968, selling subsidized Nirodh brand condoms. Typically these programs sell

condoms, spermicides, and oral contraceptives without prescription. In Egypt, however, subsidized IUDs are sold through private physicians and pharmacies. And the Bangladesh program is considering marketing injectible contraceptives on a trial basis.

Such programs can dramatically increase the availability of contraceptive methods. In Sri Lanka, for example, some 6000 commercial outlets sell subsidized condoms and pills, more than five times the number of government family planning outlets. In 1981, about half of all pill users and 80 percent of condom users obtained supplies from the social marketing program there (World Bank 1983b). The Bangladesh social marketing project supplied two-thirds of all condom users, 12 percent of pill users, and 70 percent of spermicide users--altogether about a quarter of all persons using contraception in the country (USAID 1983). Social marketing schemes served more than 10 percent of all contraceptive users in Colombia, Jamaica, and Thailand in the late 1970s (Altman and Piotrow 1980, p. J423).

Social marketing programs also diversify the types of outlets where contraceptives can be obtained. Official family planning programs tend to offer methods through health services, particularly maternal and child health services. Such channels are important for reaching female clients but may not reach men. By selling condoms through commercial channels, such as pharmacies, vendors, small shops, and street hawhers, social marketing programs improve access of potential male clients.

These programs have other major advantages. They use an existing network of distributors already familiar to potential clients. The skills and infrastructure for distribution are already in place. And because contraceptives are sold (although at highly subsidized prices), some costs are recovered to the public sector. The latter still has to provide advertising,

promotion, contraceptive supplies, transport, and medical services for treatment of side effects. Some training is necessary for commerical suppliers of oral contraceptives to advise clients on contraindications, side effects, and proper use, as has been done in Jamaica, Nepal, and Thailand (Altman and Piotrow 1980, p. J411).

NGO collaboration. Collaboration between government and private nongovernmental organizations (NGOs) have also helped to improve access to services. This collaboration has taken many forms: direct grants to NGOs providing family planning services; coordinated planning of service points to assure maximum coverage of the population; and contracts with NGOs to provide training or other services to government programs. In Bangladesh and Indonesia, NGOs provide a large share of urban family planning services, allowing government to focus on rural areas. Several state governments in Brazil have collaborated with the private Brazilian Family Planning Association (BEMFAM) to provide community-based distribution of contraceptives in the Northeast. Local family planning associations have trained private drugstore employees to provide contraceptive information and services in Colombia, the Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, and Nicaragua (Rizo 1979).

In improving access to contraceptive information and services, program managers must consider the needs of all types of potential clients. When services are provided through a maternal and child health program, important client groups may be overlooked: men, married women who have not had a child, and adolescents. NGOs have played a leading role in devising strategies for improving the access of these groups.

Social marketing programs greatly enhance access for men. But male involvement is also limited by the lack of highly effective and reversible

male contraceptive methods. Vasectomy is not generally reversible; condoms can be highly effective, but must be used consistently; and withdrawal and rhythm have very low use-effectiveness. Male access to information is also important as a source of reinforcement of their partner's commitment to use a method. Negative attitudes of husbands toward contraception make it difficult for women to practice a method consistently and effectively; husband's opposition is cited in many countries as a reason for not using contraception (see the earlier discussion of reasons for nonuse). Private family planning associations have experimented with many approaches for reaching men. Examples include: information and training of male religious leaders in Bangladesh and Malaysia; involving civil servants in Tunisia and Nigeria and taxi drivers in the Philippines; promoting family planning through a rickshaw-puller's union in Bangladesh; and condom vending machines in men's public toilets in Hong Kong (IPPF 1981). Civil servants, trade and industrial unions, police, and the military are all predominantly male groups that can be targeted for contraceptive information and services.

Adolescents are another important group with growing unmet need and poor access, particularly in the Americas. In these countries, where the marriage age is rising and where informal unions are common, unwanted pregnancies among unwed teenagers are also common. In the United States, more than half of all births to teenagers are to unwed mothers, and nearly 40 percent of teenage pregnancies ended in legal abortion in 1978 (Alan Guttmacher Institute 1981). The consequences of unwanted pregnancies among young people are tragic: greater health risks for mothers and children (see Annex B); resort to illegal or poorly performed abortion of high risk to life and health; interruption of schooling and limited employment opportunities for mothers; poor quality of life for their children; social stigma for both

mother and child. Many children of unwed mothers are simply abandoned; an estimated 16 million Brazilian children, or one-third of that country's youth, have suffered this fate (IPPF 1984a). As the age of marriage rises in other developing regions and urbanization relaxes traditional social restraints on sexual activity, the incidence of nonmarital teenage pregnancy is likely to increase.

Contraceptive information and services can prevent many unwanted pregnancies among adolescents. Courses on family life, reproduction, family planning, and responsible parenthood can inform teenagers of both sexes while in school. These curricula are already offered in schools in the Dominican Republic, Ghana, Korea, Mexico, and the Philippines, and are under development in Kenya and Sierra Leone (Sherris and Quillin 1982). Reaching out-of-school youth poses greater challenges. Posters, radio, and television messages have all been used. Private family planning associations have played an important role in extending services to adolescents (for example, in the Dominican Republic, Guyana, and Jamaica) (IPPF 1983b).

Informed Choice

Perhaps the most critical point in the delivery of family planning services is the initial interaction between program staff and the potential client. This interaction should be oriented toward the special needs of each client. Clients need basic information about the effectiveness, side effects, and proper use of all available methods in order to evaluate which method is the least costly and most appropriate for his or her circumstances. This information eases concerns about rumored but unfounded side effects and promotes more effective contraceptive use: "Lack of familiarity with the characteristics of a product, how it will be used, how it will be perceived, what the associated side effects may be, etc., are barriers to the adoption of

all new products, including the contraceptives" (Mauldin 1979, p. 91). To the extent that much information on the subject of fertility and family planning is communicated informally from person to person, among neighbors and friends, better information for clients also lowers costs to nonusers.

The literature on compliance with medical therapies suggests that instruction to patients is an important determinant of compliance (Whelan 1974, p. 354). One-third or more of all medical advice is not followed: the greater the side effects associated with the treatment, the lower the compliance (Ibid., p. 349). Because family planning is preventive and causes side effects in otherwise healthy women, compliance for contraceptives may be an even greater problem; use-effectiveness and continuation may be significantly influenced by good instruction to clients. In fact, clients in poor health may blame every health problem on the contraceptive method unless properly informed. A study of 500 family planning clients in Mexico City found that clients who expected changes in menstrual bleeding as a result of family planning acceptance were more likely to continue in the program, even though these side effects were often perceived negatively (Zetina-Lozano 1983, p. 132). Sales of suppositories and condoms increased in Colombian pharmacies where clients were provided with pamphlets on effectiveness, proper use, and side effects of these methods; this increase was statistically significant when compared with control pharmacies. There was also an increase in the sales of oral contraceptives, but this was not statistically significant (Bailey and de Zambrano 1974).

Virtually all programs provide some information to clients about methods, but for many reasons, informed choice by clients is not a reality. First, programs have tended to place more weight on the judgment of the provider in the selection of an appropriate method than on the client. The

joint provision of family planning programs with curative health services may have encouraged this. Providers have their own opinions about the effectiveness and risks of various methods which bias their recommendations to the client. Providers' doubts on the ability of couples to effectively use barrier methods, for example, may be transmitted to potential users, discouraging their use (Bruce and Schearer 1979). These methods may not even be mentioned (Expert Group on Fertility 1983, p. 10). Some providers may be reluctant to recommend methods of which they personally disapprove--methods such as sterilization, the pill, or abortion. In a study in the Philipppines in the 1970s, for example,

> "Thirteen percent of clinic directors were opposed to birth control in any form. Although a majority were favorably disposed toward the IUD, 37 percent said they would not recommend the condom, 38 percent would not recommend vasectomy, and 50 percent would not recommend female sterilization" (Warwick 1982, p. 137).

Programs that offer financial incentives to providers who recruit clients for a select group of methods or that enforce method-specific targets increase the likelihood that other methods will not be mentioned or that the explanation of methods will be biased. A study of user preferences in India, Korea, the Philippines, and Turkey showed that when clients were provided with thorough and balanced explanations of all of the methods available, they chose methods in markedly different proportions than did clinic populations before the study (WHO 1980).

Second, some providers fear that clients will refuse to accept contraception if told in advance of possible side effects. One Kenyan fieldworker notes: "If they are told of the side effects the patients may not come back. Instead we give them appointments for check-ups" (Warwick 1982, p. 168). In the Indian program in the late 1960s and early 1970s, the side

effects of the IUD were not explained, an examination was not usually conducted prior to IUD insertion, and there was little treatment, referral, or reassurance about side effects; "...it was felt that it was sufficiently hard to persuade women to use the I.U.D. at all and would be harder if they had to be told that they might experience pain or bleeding" (Cassen 1978, p. 158). This strategy backfired. Rumors circulated that the IUD could migrate within the body to the heart and lungs, and that it could cause penile injury or death to the husband during intercourse. IUD acceptance levels dropped precipitously, from 910,000 in 1966/67 to 353,000 in 1972/73. By 1975/76, acceptance had risen to 594,000 per year. Side effects of the IUD are now explained and taken more seriously by program personnel.

Third, information provided to clients may be inaccurate or incomplete because personnel lack adequate training. In the early stages of the Egyptian program physicians were provided with little or no training in the correct use of the pill or in detection and treatment of side effects (Warwick 1982, p. 143). According to an evaluation of family planning programs by the United Nations Fund for Population Activities (UNFPA) in the mid-1970s, workers in the Dominican Republic, Kenya, and the Philippines felt that their training in contraceptive methods had been inadequate (Ibid, p. 143-144). Poorly informed, workers may not be aware of side effects or may spread misinformation about them. In order for clients to be informed, providers must understand the technology themselves.

Finally, the information provided to clients may be too technical to be understood. Too much information is difficult for clients to digest and wastes the time of clients and providers. Lectures on reproductive biology may present unnecessary overload to most clients (for example, the Dominican

Republic, in Stycos 1975). Informal, interpersonal techniques work better than formal presentations using technical or anatomical terms.

Programs can promote informed choice through:

- Better staff training on the characteristics, side effects, mode of action, and effectiveness of program methods. As new methods are introduced, additional training is necessary.
- Careful, well supervised use of method-specific targets and provider incentives to ensure that providers are not holding back information because of their own prejudices or financial gain. Additional awards, such as schooling or training opportunities, might be offered for providers that attract and retain clients for a variety of methods.
- Use of the mass media to inform the public--both current and potential users--of the benefits, side effects, and proper use of contraceptive methods. Radio Bangladesh, for example, broadcasts talk shows, interviews, and write-in shows to inform the public.

Method mix

Each contraceptive method has different attributes and therefore different "costs" associated with its use, such as effectiveness, reversibility, side effects, convenience of use, and contraindications (Bulatao 1982). Providing a reasonable variety of methods improves both acceptance and continuation of contraception:

- A greater number of methods improves the acceptability of the program to a wider group of potential clients. Some people have medical conditions that contraindicate use of specific methods. Oral contraceptives, for example, are not prescribed for women over 40, women who smoke and are 35 or older, women who are breastfeeding, or women who have a history of stroke, thromboembolism, impaired liver function, or heart attack. The IUD is

contraindicated for women who have an active pelvic infection, or who have a history of pelvic infection or ectopic pregnancy. Some women cannot be properly fitted with diaphragms. Some people are unable to tolerate the side effects, or for that matter other method-specific factors, such as inconvenience of use, of specific methods. Some methods may be religiously or culturally unacceptable to some couples. Abortion and contraceptive sterilization are not practiced by many Muslim and Catholic couples, for example. (Sterilization is a very popular method in Muslim Tunisia and Bangladesh, however. And although contraceptive sterilization is illegal in Costa Rica, 18 percent of married women of childbearing age had been sterilized in 1981.) Safe and effective alternative methods of fertility regulation must be available for these couples. When couples have religious beliefs that forbid any means of fertility regulation other than periodic abstinence, information on proper timing of abstinence can be provided. Periodic abstinence (rhythm) has been an important program method in Mauritius and the Philippines.

The introduction of injectable contraceptives through home visits in the Family Planning-Health Services Project in Matlab, Bangladesh has been suggested as a major reason for higher prevalence and continuation rates than in the earlier Contraceptive Distribution Project and in the Bangladesh national program. Injectables are extremely convenient for poor rural women. They are taken only 4 times per year, are reversible, need no storage at home, do not interfere with lactation, and are highly effective. Injectables account for almost half of the FPHSP's 40 percent prevalence rate. The national program, which offers injectables on only a limited basis, has a prevalence rate of 14 percent for all modern methods and only about 1 percent for injectables.

- Providing a range of methods improves the likelihood that the client will switch methods instead of discontinuing. Because method switching occurs, all-method continuation rates are higher than first-method rates. Table 5 summarizes contraceptive continuation rates for the first method and for all methods according to the first method accepted and the time since acceptance, based on follow-up studies in six countries. The difference between the all-method and first-method continuation rates is the percent of acceptors who have switched. For example, in 1974 in the Philippines, 76 percent of pill acceptors were continuing to use some method of contraception six months after acceptance; 66 percent of acceptors were still using the pill and 10 percent had switched to other methods. Twenty-four percent of pill acceptors had dropped out of the program. As the time since acceptance increases, switchers become an even greater proportion of continuing users. The amount of switching that occurs in each country varies. Switching is an important phenomenon in Bangladesh, Bangkok (Thailand), the Philippines, and Tunisia, and less so in Indonesia. In the FPHSP in Matlab, Bangladesh, method-switching is encouraged so that clients will find a method that they are willing to use consistently and effectively; 36 percent of women had switched methods within 16-18 months after initial acceptance, with an all-method continuation rate of about 70 percent (Bhatia and others 1980). Method switching is also common in the United States. Married white women age 25-39 have used an average of more than 2 methods, and among those age 25-29 over three methods have been used, on average (Bruce 1983).

Of course, not all acceptors who switch methods would discontinue in the absence of alternative methods. But this would certainly have been the case for some. The reasons for discontinuation for the most recent method (that is, including method switching) tend to reflect higher client

Table 5 Contraceptive continuation: cumulative rates for first method and all methods, by first method accepted and months since acceptance

Date	Country	Sample size	First method	First method continuation [a] 6 mos.	12 mos.	24 mos.	36 mos.	All method continuation [b] 6 mos.	12 mos.	24 mos.	36 mos.
1979	Bangladesh (Matlab Thana)	1253			(16-18 mos)				(16-18 mos)		
			DMPA		44				73		
			Pills		21				64		
			Condom		13				58		
			All methods		33				69		
1975-76	Indonesia (Java-Bali)	1536	Pill	75	64	47	32	77	66	50	36
			IUD	93	90	80	74	96	92	85	80
			Condom	65	56	52	c/	71	63	58	c/
			All methods	81	72	60	46	83	76	64	56
1972-73	Morocco	1001	Pill	63	45	27	16	68	52	34	23
			IUD	82	71	55	46	85	77	66	57
1972	Philippines	1865	Pill	66	54	35	..	76	66	50	..
			IUD	86	77	63	..	93	86	73	..
			Rhythm	65	46	(34) d/	..	71	53	(46) d/	..
			Other	40	(21) d/	0	..	69	56	0	..
1974	Philippines	2987	Pill	66	53	35	24	76	63	44	34
			IUD	81	72	57	44	91	84	70	58
			Condom	40	29	(15) e/	c/	66	51	(30) e/	c/
			Rhythm	71	60	40	(29) e/	77	66	47	(33) e/
1975-76	Thailand (Bangkok)	997	Pill	77	66	48	38	84	77	65	58
			IUD	75	62	37	(28) f/	91	80	63	(49) f/
1973-74	Tunisia	1226	Pill	61	44	27	17	70	56	37	26
			IUD	84	72	57	46	88	78	66	57

.. Not available.
( ) Less reliable figures, few cases.

a. Percent of acceptors continuing to use the first method.
b. Percent of acceptors continuing to use any method of contraception.
c. Fewer than fifteen cases.
d. Fewer than twenty cases.
e. Twenty to forty-nine cases.
f. Only ten cases.

Note: The continuation rates here may be overestimates, as a typically large percent of cases sampled cannot be located for various reasons. "Loss to follow-up" was 24.4 percent for the 1972 Philippines study and 17.7 percent of the original sample in Java-Bali. In the Bangkok study, only 997 interviews were completed out of a sample of 2690. This large loss to follow-up may bias results, since those not contacted may be at greater risk of discontinuation.

Sources: Bangladesh: Bhatia and others 1980, Table 5.
Indonesia: Teachman and others 1980, Tables 2 and 3.
Morocco: Lecomte and Marcoux (1976), Table 4.
Philippines: Laing 1974; Laing 1978, Tables 1 and 3.
Thailand: Institute for Populaton and Social Research 1976, Tables 3 and 6.
Tunisia: Lecomte and Marcoux (1976), Table 4.

satisfaction with services than reasons for discontinuation of the first method accepted. In the Philippines, for example, side effects were cited as the reason for discontinuation by 49.5 percent of first-method discontinuers, compared to 33.4 percent of last-method discontinuers. Desired pregnancy was cited by 6.2 percent of discontinuers for the first method and 9.7 percent for the last method (Laing 1974, p. 306, Table 7).

- Couples' contraceptive needs change in the course of their reproductive lives. Couples may be unmarried, newlywed and wanting to postpone a first birth, spacing between births, or limiting family size after the birth of the last desired child (Campbell and Berelson 1971, Miller 1979). Changing reproductive goals alter the relative importance of method attributes. Effectiveness is less important to couples who plan to have more children than for those who want no more. Sterilization, which is not reversible, is not at all attractive for spacers but very much so for limiters. Coitus-dependent methods may be more convenient before marriage, if frequency of intercourse is low and irregular. IUD and sterilization acceptors tend to be older and to have had more children than acceptors of the pill and barrier methods that are more easily discontinued (Teachman and others 1980, Sullivan and others 1976). In the course of their relationship, couples are likely to change methods, perhaps several times, as their needs change.

Early family planning programs had limited method mix, due to the sheer lack of alternatives. In the late 1950s and early 1960s, India had to rely on rhythm, the diaphragm, and the condom. When the IUD was developed, there were high expectations that it would prove widely acceptable in developing countries because of its reversibility, high effectiveness, and convenience. This method was also attractive to program managers because it

required infrequent resupply. Programs in India, Kenya, Pakistan, Singapore, and Taiwan, China, among others, rushed to promote the IUD as the major program method. High rates of expulsion and removal because of side effects showed that the IUD was not as universally acceptable as had been hoped (Potter 1971). By the mid-1970s it became apparent that the IUD was not the "ideal" contraceptive for many couples. Greater emphasis was placed on achieving a method mix.

Today, on paper at least, most programs endorse the concept of method mix. There are a few exceptions. Sterilization and abortion have not been permitted for religious reasons in some countries. In Mauritius, where sterilization and menstrual regulation are not provided by the public program, the private family planning association is permitted to provide these methods. Injectable contraceptives (Depo-provera, DMPA) have not been approved in some countries because the U.S. Food and Drug Administration has not approved them for use in the United States. With these few exceptions, most national programs have embraced the principle of providing a number of different types of contraceptives that vary in effectiveness, convenience of use, and reversibility.

But the number of methods available from any given service outlet is often limited. Some governments have promoted a single method or methods because of ease of implementation, low requirements for follow-up, low costs, or a conviction that a method is more effective and thus will have a greater demographic impact. Sterilization continues to be emphasized by programs in India, Korea, and Sri Lanka. It represents over three-quarters of modern contraceptive use in India and two-thirds in Sri Lanka. In India, the condom is the only widely available reversible method; the pill is not offered through social marketing arrangements (as in Bangladesh and Sri Lanka), and it

is dispensed through only 4500 rural and 2500 urban outlets (Soni 1983). There are efforts underway to make the pill more easily available, however. In Sri Lanka, one-quarter of married couples are using traditional methods of contraception, an indication of unmet need for reversible methods. By contrast, the Egyptian and Moroccan programs rely heavily on the pill; although theoretically available, the IUD is not widely promoted in these countries. In Egypt, for example, only one-fourth of program outlets are staffed or supplied to insert IUDs (World Bank 1983a). The Indonesian program, once stressing the pill, is currently placing greater emphasis on the IUD, which has greater use-effectiveness than the pill and has fewer resupply requirements. In Bangladesh, financial incentives are offered to providers and clients for acceptance of sterilization and the IUD. Other methods are theoretically available, but special campaigns and much staff time are devoted to attracting clients to these methods.

Supply constraints--both domestic and foreign--also limit method availability. In many countries a large portion of supplies is provided by aid donors. Changes in donor procurement contracts may result in sudden changes in the brand of contraceptives offered or their packaging: Copper-7 IUDs may suddenly replace the Lippe's Loop; the hormonal composition of oral contraceptives may change. This is confusing to both workers and clients. Some donors are legally restricted from supplying particular methods; the United States Agency for International Development, for example, cannot supply injectable contraceptives or finance abortion training or services. Because of procurement difficulties, Thailand came dangerously close to exhausting its supply of injectable contraceptives in 1982.

Poor internal transport and logistics as well as a shortage of qualified providers of some methods (such as menstrual regulation, IUD

insertion, sterilization) or of female staff may also limit method mix. What appears to be a shortage of personnel may, in fact, be due to unnecessarily high skill requirements for dispensing some methods. Only physicians can prescribe the pill and insert IUDs in the Egyptian program; outreach workers recruit clients but are not allowed to dispense contraceptives (World Bank 1983a). The Moroccan program also relies heavily on physician services (Carrino 1983). Experience in Indonesia, Thailand, and elsewhere shows that less skilled workers can be trained to provide many methods without sacrificing service quality.

The result of these policies and bottlenecks is that when a client arrives at a supply point, certain methods may be out of stock, others may not be mentioned or may be downplayed by staff, some may have changed brands (altering the regime or side effects of the pill, for example), and still other methods may be available only at more distant facilities.

To improve contraceptive acceptance and continuation, programs must first be committed to provide at a minimum enough methods to satisfy the needs of the major groups of potential clients. Effective reversible and nonreversible methods (or methods with long duration) for both men and women are absolutely essential. Beyond this, managers might consider methods for groups who are likely to have contraindications, such lactating women. Foreign bottlenecks in the supply of methods can be difficult to overcome. Their solution is generally country-specific. But, as discussed earlier, many official programs have successfully improved the availability of a variety of contraceptive methods--through outreach, social marketing programs, increasing the responsibilities and training of fieldworkers, and setting up local supply depots.

Follow-up

Follow-up support for family planning clients includes: medical referral for side effects; encouraging clients to switch to another method if their first choice method causes problems or if their contraceptive needs change; and ensuring that clients are practicing contraception regularly and effectively.

Follow-up services reduce the physical and psychological costs of side effects and the risk of method failure and pregnancy, reducing discontinuation due to these factors. Virtually all follow-up studies have found that a high proportion of contraceptive discontinuation is for medical reasons or side effects. During the first year of use, 4 to 34 percent of IUD acceptors have the devices removed for medical reasons or due to side effects, and 8-50 percent of pill acceptors discontinue for the same reasons (Kreager 1977). Side effects and medical reasons were cited as the major reason for discontinuation by 66 percent of pill and 43 percent of IUD discontinuers in the Philippines (Laing 1974). Discontinuation due to method failure (often a result of inconsistent or improper use) is particularly high for rhythm (periodic abstinence) but also for the pill and the condom. A study of adolescent family planning clients in the United States estimated that about 15 percent of adolescents who sought services would become pregnant within 18 months of their first visit to a family planning clinic, due partly to inconsistent use (Furstenberg and others 1983, p. 214). In St. Kitts-Nevis, 52 percent of the women who had accepted a method from the program between 1971-78 had become pregnant since, but only 13 percent of these claimed that the pregnancies had been planned (Bailey and Keller 1982, p. 54).

The need for follow-up is greatest during the first three to six months after acceptance, when proportionately the most discontinuation occurs

(Kreager 1977, Bruce 1983). Weiss and Udo (1981) found that 11 percent of pill acceptors in Calabar State, Nigeria never took the first month's supply of pills and only 53-62 percent of acceptors were using them three months later. In the study of adolescent clients in the United States, about half of all discontinuation occured within three months of acceptance (Furstenberg and others 1983, p. 214). In St. Kitts-Nevis, 32 percent of acceptors discontinued within the first six months, compared to 11 percent more six to twelve months after acceptance (Bailey and Keller 1982, p. 50).

Follow-up services in most instances require clients to return to service points or providers for a check-up within a specified amount of time after acceptance. This means that clients incur additional travel and time costs. They may be willing if they live close by, but will probably not come if distances are large, unless side effects are very severe and can't be remedied by abandoning contraception. Review of client records, for example, showed that only 12 percent of acceptors in St. Kitts-Nevis (between 1971-78) and 17 percent in St. Vincent (1975-78) had not missed at least one follow-up visit. (That is, failure to appear within three months of a scheduled visit.) Sixty percent of those who failed to return in St. Kitts-Nevis and 37 percent in St. Vincent cited reasons such as side effects, inconvenient clinic hours, clinic too far away, and dislike of clinic personnel (Bailey and Keller 1982, p. 48). Only a very small percentage had switched to other sources of supply.

From the perspective of the client, follow-up is best provided by community-based services or fieldworkers who are readily available or make household visits. The Indonesian family planning program in Java and Bali realizes very high continuation rates in part due to follow-up by fieldworkers, local acceptor groups, and mothers' clubs. Individualized

follow-up visits may not be welcome in societies where family planning is still regarded with suspicion, however. And not all countries can afford an intensive infrastructure of fieldworkers.

Even in programs without an extensive fieldworker network, more can be done to encourage follow-up. Most family planning programs evaluate worker and program performance on the basis of the number of new clients recruited. This may be reflected in acceptance targets and/or through financial incentives to workers for recruitment of new clients. Such a system leaves little incentive for workers to provide follow-up services. To encourage follow-up, performance targets can be set in terms of continuing users or number of checkups. Where providers receive financial incentives, payment can be deferred until after a post-acceptance follow-up visit. Training must also emphasize follow-up procedures. And programs must be adequately staffed to both recruit and follow-up clients. Close supervision and periodic surveys can verify follow-up performance.

Programs can also experiment with ways of encouraging clients to seek follow-up care. In Bangladesh, India, and Sri Lanka, acceptors of some methods are paid compensation for transport, food, and lost work time. These payments could be deferred until after a follow-up visit. Alternatively, some other type of incentive for returning might be offered. The media can also be used to inform users of signs of trouble and to encourage them to receive periodic checkups.

Ensuring Social Acceptability

Family planning services address a potentially sensitive, personal subject and may be perceived as in direct conflict with prevailing social norms that favor high fertility. When family planning lacks social legitimacy, potential clients face many social and psychological costs for using

services. Further, services introduced by an "outside" agency with few links to the community and little consideration of local norms and needs may not receive ready acceptance. To the extent possible, family planning programs must have the support of the clients and communities they serve.

Private family planning associations and nongovernmental groups have led the way in experimenting with new ways to involve clients and communities in all phases of planning, implementation, and evaluation. These strategies have included: local needs assessments; consultation with local leaders; encouraging local contributions of money and labor; training local people as paid or volunteer workers; consulting and training traditional midwives and healers; establishing local management or review committees; and organizing groups of family planning acceptors to reinforce effective use and engage in other community development projects (Olmstead 1983, IPPF 1982). The approach used is highly dependent on the nature of the community. In some there may be a felt need for family planning in the community already (as in urban or semiurban areas). Other communities may not feel that family planning is a high priority, or they may be completely unaware and unmotivated. The local power structure may inhibit participation of the neediest groups in some cases. And each community posesses different degrees of organizational experience on which to build.

In communities where there is no apparent demand for family planning, where there is a felt need for other services, or where family planning may be controversial, family planning services have been introduced jointly with services in greater demand. Even when not controversial, this strategy has been used to increase the availability and type of outlets, to reach out to specific groups of potential clients. The Honduras Family Planning Association has developed a community-based adult literacy program with a

planned parenthood theme in two areas. In Awutu, Ghana, family planning is promoted for childspacing as part of a maternal and child health project. Family planning is provided with agricultural extension to a population of 100,000 in Allahabad (Uttar Pradesh state, India) and as part of the nationwide Integrated Rural Development Project in Pakistan (IPPF 1982). It has been offered through the resettlement schemes of the Federal Land Development Authority in Malaysia (Kanagaratnam and Pierce 1980) and with women's rural credit cooperatives and vocational training in Bangladesh. Profamilia, the private family planning organization in Colombia, extended its services to the countryside through the National Federation of Coffee Growers (Echeverry 1975, Bailey and Correa 1975). In China, India, and the Philippines, family planning services are organized in factories. Both the Indonesian and Chinese programs have used strong political organizations which extend into rural areas to provide many economic and social services, including family planning.

Private family planning associations are well suited to testing these interventions: they are small, decentralized, flexible, well staffed, highly motivated, have greater control over service quality, and are less confined by the bureaucratic inertia of government. But some of these strategies have been tried successfully on a larger scale. Both because of the need for medical backup services as well as to enhance the acceptability of programs, family planning has been offered alongside health or maternal and child health services in many national programs. The Planned Parenthood Federation of Korea pioneered the highly successful nationwide mother's club program. These clubs served as a source of contraceptive supplies, of reassurance for acceptors, and for spreading information on the benefits of family planning. (They have now merged with the Saemaul Women's Association and are involved in

other income-generating and credit activities.) Indonesia now has a large-scale mothers' club program, and Bangladesh is developing one. The national program in Indonesia has successfully involved village headmen, religious leaders, and local volunteers on the islands of Java and Bali, where over two thirds of the population live. In the Philippines' national program, Barangay Service Points for contraceptive resupply are organized and run by local volunteers (World Bank 1984). Recruiting personnel who are both locally acceptable and competent to promote family planning is not easy, however. In the 1960s, the Pakistan program attempted to use local dais (traditional birth attendants) as family planning fieldworkers. Very few had ever tried contraception, and the overwhelming majority did not believe in family planning. They were replaced in the early 1970s by more educated, urban women with greater contraceptive experience and training, but who were not locally acceptable. Neither arrangement worked well.

Involving communities and clients improves the acceptability of services by making them more responsive to local needs. A sense of community "ownership" is promoted: the service is less likely to be perceived as being imposed by outsiders. Use of local resources, such as traditional midwives, local volunteers, and contributions in cash or in kind, is cost-effective. But all of these approaches exact certain requirements of management not always found in large-scale public programs: decentralized decisionmaking; technical and organizational expertise to support local organizations, volunteers, and clients; skilled managers and fieldworkers who can identify local leaders, stimulate community activities, supervise volunteers, and reconcile local needs with program capabilities; and sometimes workers who are competent in more than one technical field. Finally, social acceptance of

family planning takes time and is a continuous process. There is no "benchmark" for measuring social acceptability, nor can managers easily set targets; it is one of many factors that results in greater contraceptive use.

IV. The Cost-effectiveness of Client-oriented Strategies

Reducing the objective and subjective "costs" to clients of using contraceptive services--for instance by improving access to and the quality of services--can have an impact on contraceptive prevalence. This has been empirically verified by many research projects cited above. But are better family planning services a cost-effective way of increasing contraceptive prevalence compared to other strategies to reduce the demand for children? And among the possible improvements in services, which is the most cost-effective? It is conceivable that in some countries quality improvements will have a greater impact at less cost than service expansion.

The answers to these questions will differ in different settings, both among and within countries with varying levels of contraceptive use, unmet need, service quality and availability, and program efficiency. Although we can't be sure how much unmet need can be satisfied by improving the quality and availability of services, the amount of unmet need is quite high in some countries; satisfying all or part of it can have a major impact on contraceptive use. In Bangladesh, for example, unmet need was about twice the level of contraceptive use in 1979. In Nepal in 1981, it was 3-4 times the contraceptive prevalence rate of 7 percent. In Kenya, where contraceptive prevalence has been increasing at a rate of only 0.2 percentage points annually (1967-77), satisfying unmet need would raise prevalence the

equivalent of 30-50 years' average annual increase. Egypt is in a similar situation. In St. Kitts, the number of discontinuers equaled or exceeded new acceptors between 1971 and 1978 (Bailey and Keller 1982).

Even in countries with low unmet need, improved services may be cost-effective in raising prevalence. In southern Thailand and rural Colombia, there are "pockets" of unmet need despite the fact that services seem to be available (Havanon and Pramualratana 1983; Radel and Hollerbach personal communications). Even where the likely impact in both absolute and relative terms may be small, improved family planning services may still be the most cost-effective way of increasing prevalence. Further, unmet need is not static; at different points in time we can expect that better services will be more or less cost-effective relative to other strategies.

Demonstrating cost-effectiveness requires information on both the impact of different strategies and the cost to programs of implementing them. Research projects have been far more successful at measuring the former than the latter. Projects such as those in Matlab, Bangladesh, have charted the impact of different interventions with amazing precision. Surprisingly, the costs have not been adequately assessed. Three problems complicate cost assessments: (1) separating implementation costs from research costs; (2) separating the costs of health and family planning services, especially where staff are shared; and (3) evaluating the high level of expertise, enthusiasm, and commitment among staff of these projects, a level greater than that usually found in ongoing programs. The objective of most research projects, at any rate, has been to demonstrate an effect. Evaluation of costs has taken lower priority. But even if cost data were available, it is not at all clear

that these are the same as would be incurred by ongoing family planning programs attempting the same strategies or that the effects would be as great. 1/

At least three different types of data collection activities would help in evaluating cost-effectiveness and in identifying service improvements with the greatest probable impact:

(a) Operations research projects that test two or more strategies separately in the same setting, using existing program infrastructure and personnel. Both impact and cost can be assessed.

(b) Household surveys that link data on the availability and quality of services at the community level with household variables, such as fertility, contraceptive use, income, and education. This makes possible the calculation of demand elasticities for contraception with respect to the availability of services and different levels of service quality.

(c) Various market research activities, such as focus group interviews with client and prospective client groups and follow-up studies of contraceptive acceptors. This type of study costs less than the first two and the results are available quickly. Focus groups are very useful for pinpointing client attitudes toward services and identifying solutions. They capture the scope of opinion but not its distribution. Follow-up studies can measure both.

These three types of studies are complementary. Operations research projects directly address cost-effectiveness, but they are predicated by some assumptions about the demand for contraception relative to the quality and

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1/ An extension of the Matlab project is attempting to transfer the findings of earlier experiments to the government family planning program in some areas. Costs as well as impact will be carefully documented (see Phillips and others 1983).

availability of services. Household surveys, in particular, when linked with supply data can estimate the likely impact of a change in service quality or availability on contraceptive use. Market research activities do not provide cost-effectiveness data but help in identifying the most important avenues for intervention.

Annex A

Unmet Need Among Discontinuers

Table A-1 Contraceptive use status and analysis of discontinuation
(percent of currently married women 15-49)

Country	Year	Source	Current user	Never used	Discontinued			
					Not exposed a/	Want more children	Want no more children	Total discontinuers
Africa								
Cameroon	1978	WFS	3	92	4	1	(.)	6
Ghana	1979/80	WFS	10	60	17	12	2	30
Kenya	1977/78	WFS	7	68	15	8	2	25
Lesotho	1977	WFS	5	77	10	7	2	18
Senegal	1978	WFS	4	89	4	- - - 3 - - -		7
Sudan	1979	WFS	4	89	5	2	1	8
South Asia								
Bangladesh	1979	CPS	13	78	4	2	3	9
Nepal	1981	CPS	7	91	2	(.)	(.)	2
Pakistan	1975	WFS	5	90	2	1	2	5
Sri Lanka	1975	WFS	32	55	8	2	4	14
East Asia								
Fiji	1974	WFS	41	31	14	9	5	28
Indonesia	1976	WFS	26	62	8	3	2	12
Korea	1979	CPS	50	26	12	4	8	24
Malaysia	1974	WFS	33	50	9	4	5	17
Philippines	1978	WFS	36	42	14	4	4	23
Thailand	1981	CPS	57	23	11	5	5	21
Middle East & North Africa								
Egypt	1980	WFS	24	58	11	2	4	17
Jordan	1976	WFS	25	53	16	3	3	22
Syria	1978	WFS	20	66	22	1	1	13
Tunisia	1978	WFS	31	53	10	2	3	15
Yemen	1979	WFS	1	97	1	(.)	(.)	2
Latin America & Caribbean								
Barbados	1981	CPS	47	26	8	10	10	28
Colombia	1980	CPS	49	31	13	3	4	20
Costa Rica	1980	CPS	65	12	13	7	3	23
Dominican Republic	1975	WFS	32	50	11	5	3	18
Ecuador	1979	WFS	34	46	12	4	4	20
Guyana	1975	WFS	34	44	8	7	8	22
Haiti	1977	WFS	19	64	11	3	3	17
Honduras	1981	CPS	27	58	10	3	2	15
Jamaica	1975/76	WFS	40	35	9	7	9	26
Mexico	1978	CPS	40	45	9	3	3	15
Panama	1976	WFS	54	25	12	5	4	21
Paraguay	1979	WFS	36	43	13	6	3	21
Peru	1981	CPS	41	40	16	1	3	20
Trinidad & Tobago	1977	WFS	52	21	12	8	8	27
Venezuela	1977	WFS	49	30	12	5	4	20

Source: CPS and WFS data tapes.

Table A-2 Percent of married women 15-49 who have discontinued contraception and are at risk of unwanted pregnancy, by residence and background characteristics

Country	Residence			Age			Education			
	Entire country	Urban	Rural	15-29	30-39	40-49	None	1-3 years	4-6 years	7+ years
AFRICA										
Ghana	2	3	2	(.)	3	6	2	4	3	2
Kenya	2	2	2	(.)	2	4	1	3	2	1
Lesotho	2	3	2	1	3	4	2	2	1	2
AMERICAS										
Colombia	5	6	3	2	6	8	4	5	5	5
Costa Rica	3	3	3	2	2	5	4	5	3	1
Jamaica	9	10	8	4	9	13	0	5	7	10
Mexico	4	5	2	2	5	6	3	4	4	4
Panama	4	4	3	2	4	5	7	4	3	3
Paraguay	3	3	2	(.)	3	6	2	3	3	2
Peru	4	5	2	2	4	5	2	4	5	4
EAST ASIA										
Indonesia	2	2	2	1	3	3	2	1	1	2
Korea	10	9	11	4	13	12	10	12	11	7
Philippines	4	5	4	2	5	6	2	4	4	5
Thailand	3	4	3	2	5	5	3	4	4	2
SOUTH ASIA										
Bangladesh	3	5	3	2	5	6	3	4	4	7
Pakistan	2	4	2	(.)	3	6	2	6	3	3
Sri Lanka	4	4	4	2	5	5	4	4	4	4
MIDDLE EAST & NORTH AFRICA										
Egypt	4	5	4	2	6	8	4	5	4	4
Syria	1	2	1	(.)	1	3	1	4	1	2
Tunisia	3	4	2	1	3	5	3	4	3	6
Yemen	(.)	0	(.)	(.)	(.)	(.)	(.)	0	0	0

(.) = less than one-half percent

Source: World Fertility Survey data tapes.

Table A-3 Percent of MWRA who have discontinued contraception and are exposed to the risk of unwanted pregnancy,a by residence and availability of contraception

Country	Availability of contraception b/ Readily	Partly	No knowledge of outlet	Total
Colombia				
Urban	5	(.)	1	6
Rural	1	1	1	3
Total	3	1	1	5
Costa Rica				
Urban	2	0	1	3
Rural	1	(.)	1	3
Total	2	(.)	1	3
Kenya				
Urban	2	0	(.)	2
Rural	1	(.)	(.)	2
Total	1	(.)	(.)	2
Lesotho				
Urban	1	0	2	3
Rural	(.)	0	2	2
Total	(.)	0	2	2
Mexico				
Urban	4	1	1	5
Rural	1	(.)	1	2
Total	2	1	1	4
Philippines				
Urban	2	3	(.)	5
Rural	1	3	(.)	4
Total	1	3	(.)	4

a. Married women 15-49 who have ever used contraception but are not currently using it; who are not infecund, pregnant, or breastfeeding less than 1 year; and who reported wanting no more children.

b. Readily and partly available are defined as knowledge of an outlet within a certain distance or time period from home, as follows: Colombia and Costa Rica--0-5 km., 6 or more km.; Kenya and Lesotho--1 hour or less, more than 1 hour; Mexico--37 minutes or less, 38 minutes or more; Philippines--within barangay or municipality, outside barangay or municipality.

(.) = less than one-half percent.

MWRA = Married women of reproductive age (15-49)

Source: World Fertility Survey

Annex B

The Health Benefits of Family Planning

Family planning can reduce illness and death to mothers and children through three mechanisms: (1) confining all births to mothers aged 20-34; (2) preventing high parity births; and (3) increasing childspacing intervals to at least 24 months. Contraceptive services can also lower maternal mortality by preventing unwanted pregnancies that would otherwise result in illegal or poorly performed abortions. Although some family planning clients experience uncomfortable side effects from contraceptives, contraceptives bear far fewer risks to life and health than do pregnancy and childbirth, particularly in developing countries.

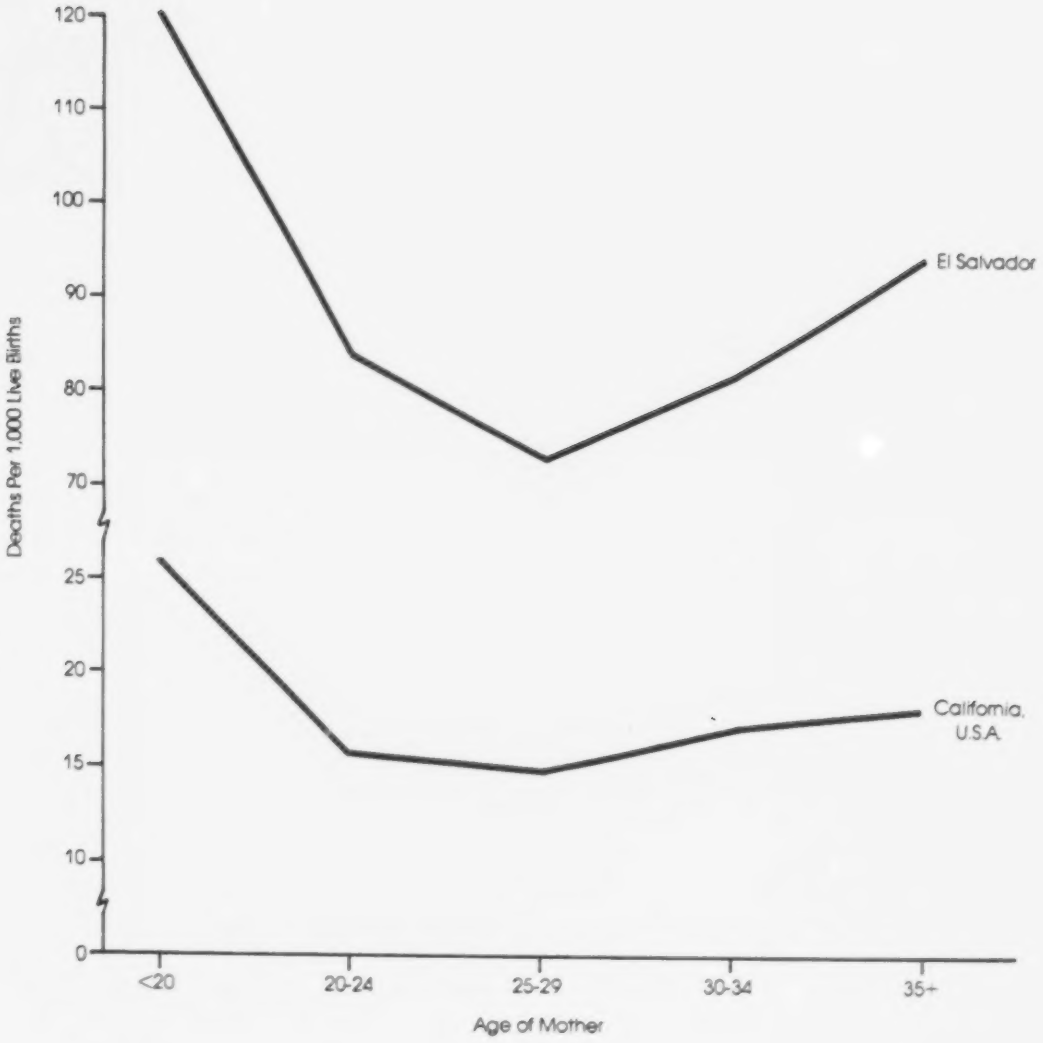
The Benefits of Planned Pregnancy

The timing of pregnancy has a clear and measurable impact on the health of women, infants, and children in both developed and developing countries. Three principal variables--maternal age, birth order, and the interval between births--determine the relative risk of illness and death to mothers and children.

Infant and child health. Infant mortality--the number of deaths of children under one year of age per 1000 live births--is highest in both developed and developing countries among teenage mothers and mothers more than 35. In Figure B-1, infant mortality in California (United States) is less than one fourth the level found in El Salvador at all maternal ages. But in both areas, infant mortality is more than 50 percent higher for mothers under 20 than for mothers in the 20-30 year age group. In El Salvador, infant mortality for teenage mothers is 120 per 1000, compared to 73 per 1000 for

Figure B-1

Infant Mortality by Maternal Age, El Salvador and the United States, 1968-70



Source: Eckholm & Newland 1977, p. J254

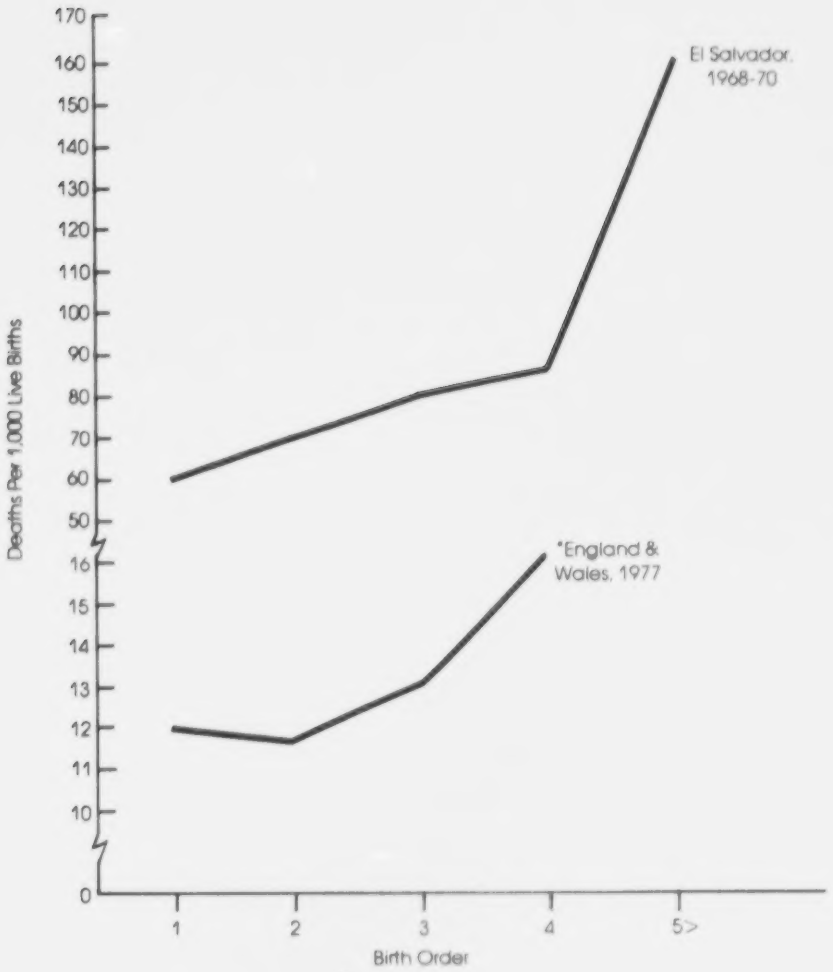
mothers 25-29. After age 30, infant mortality increases gradually but does not reach the high levels found among teenage mothers. Children born to mothers over 35 also have a greater risk of congenital defects, such as Down's syndrome, cleft palate, and heart disorders, than do children of younger mothers. The maternal ages of lowest risk to child health are generally between 20 and 34. 1/

The risk of infant death also increases with a child's birth order. In El Salvador, infant mortality rises by about 10 per 1000 live births for every additional child up to 4; for the 5th and higher birth orders infant mortality jumps from 85 to 160 per 1000 (see Figure B-2). The same trend is observed in England and Wales, but the underlying level of infant mortality is only a fraction of that in El Salvador. (Note that in England and Wales the risk of infant death for the firstborn is higher than for the second. This phenomenon is common in other industrialized and developing countries and is due partly to the increased likelihood that mothers of firstborn are teenagers and also to the tendency for the firstborn to have lower birthweight.) The relation between birth order and infant mortality remains, even when controlled for the mother's age (see Figure B-3). Within each maternal age group, infant mortality increases with birth order, but at any given birth order younger mothers have higher rates of infant mortality than do older mothers.

Family planning could have the greatest impact on infant and child mortality by guaranteeing longer intervals between births. The results of the World Fertility Survey (WFS) for 29 developing countries show that infant and child mortality generally decline with longer preceding birth intervals. 2/ That is, the longer the interval since the preceding birth, the lower is the

Figure B-2

Infant Mortality by Birth Order, El Salvador (1968-70) and England and Wales (1977)

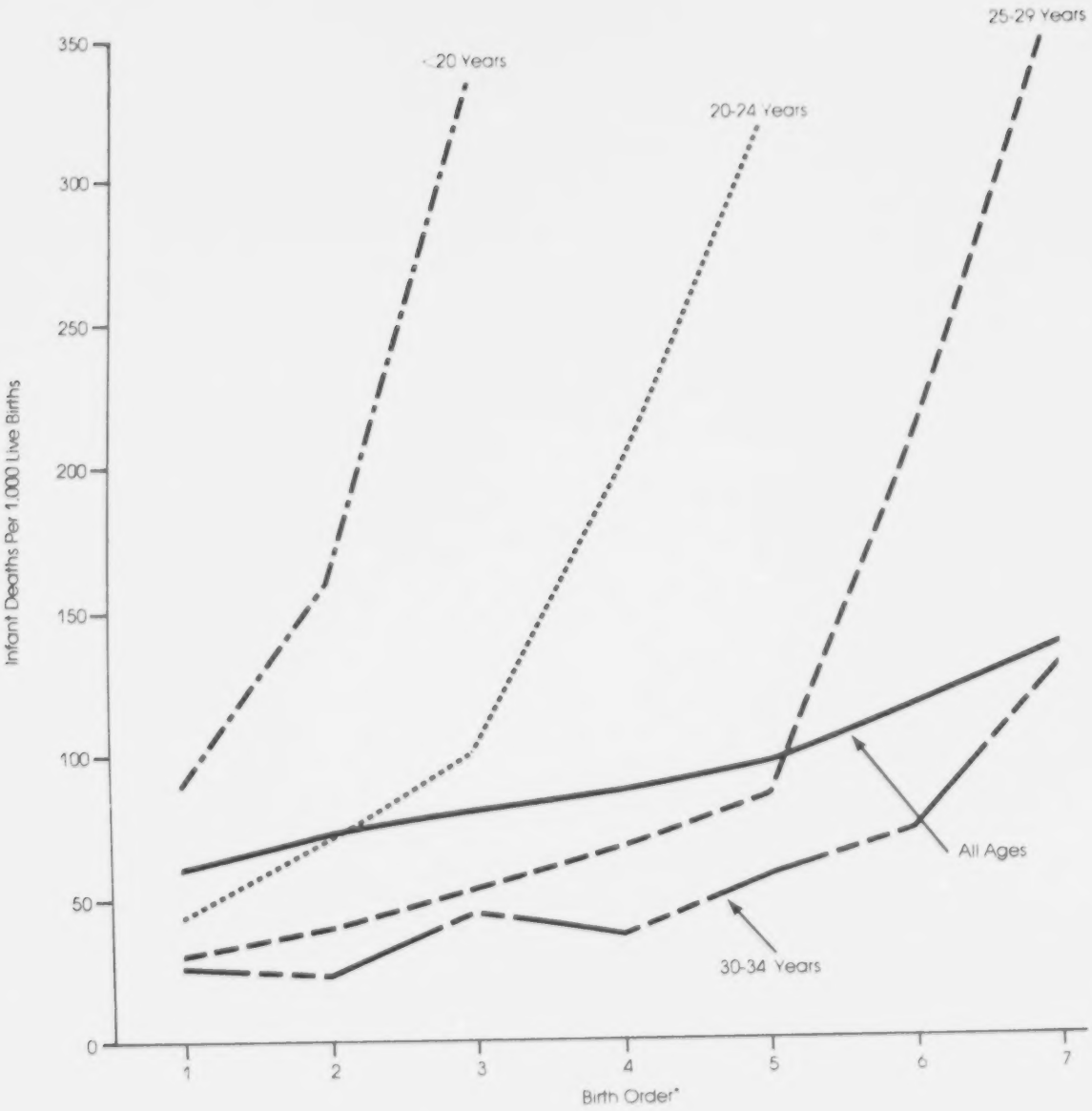


*4 or more

Source: Maine 1981, Figure 5

Figure B-3

Infant Mortality by Birth Order and Maternal Age, El Salvador, 1968-70



*Total birth order, including fetal deaths as well as live births

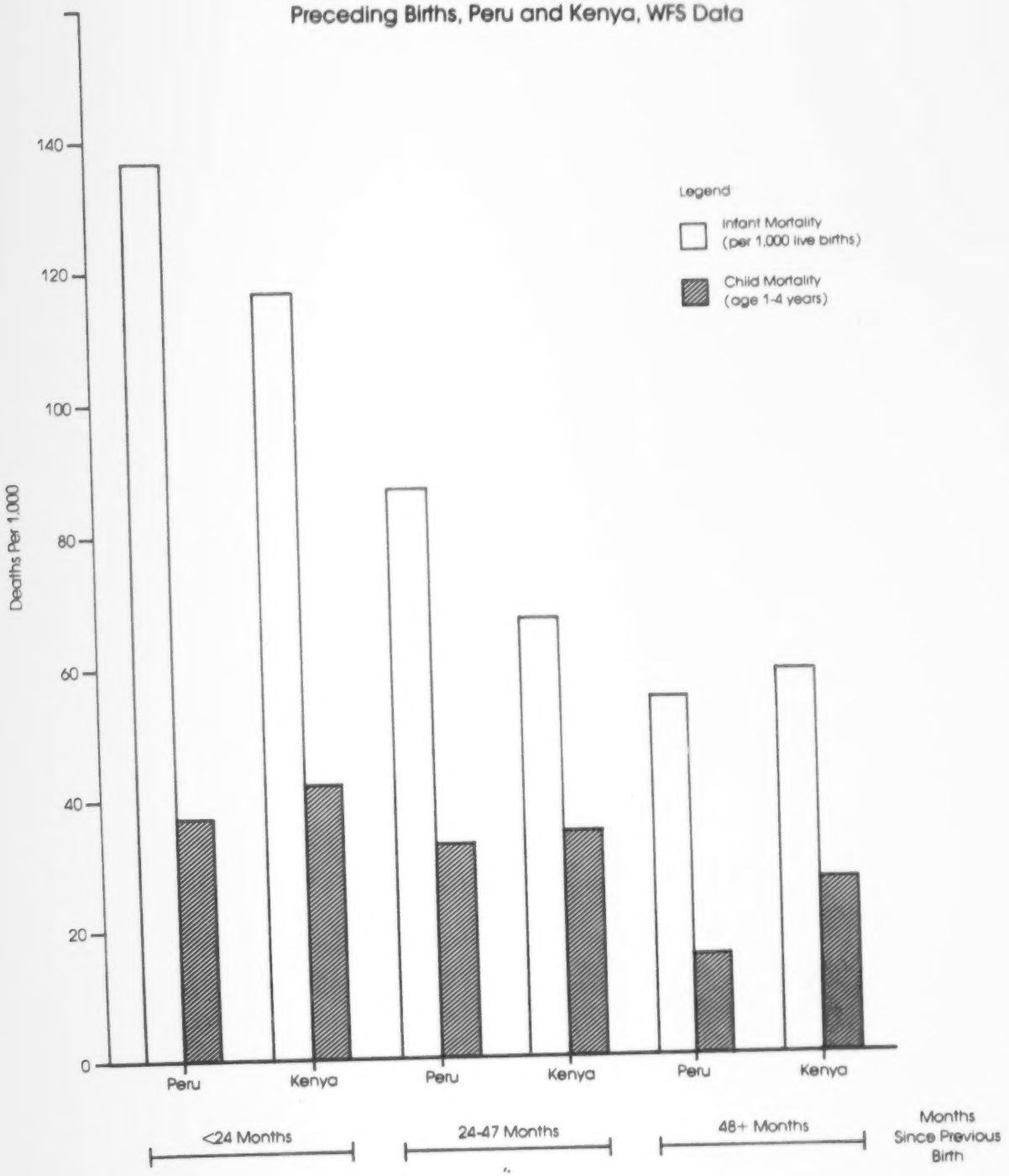
Source: Puffer & Serrano 1975

risk of infant or child death to the child that follows. The highest mortality is observed for infants and children born less than 24 months apart (see Figure B-4). In Kenya, for example, infant mortality for children born less than 24 months after a sibling is 72 percent higher than for those born at intervals of 24-47 months, and twice as high as for intervals of 48 months or more. In Peru, child mortality--deaths to children age 1 to 4 per 1,000 children in the same age group--is twice as high for birth intervals of less than 24 months as for intervals of 48 months or more. In Figure B-5, infant and child mortality in Pakistan are broken down into neonatal (less than 30 days after birth), post-neonatal (30 days to 11 months), early childhood (12 to 23 months), and late childhood (24 to 47 months). Neonatal mortality is the most sensitive to the length of the preceding birth interval. The risk of neonatal mortality for intervals of less than 12 months is almost three times the risk at intervals of 24-29 months. The decline in neonatal mortality appears to plateau after intervals of about 30 months. Post-neonatal, early, and late childhood mortality are also highest for intervals of less than 24 months, but continue to decline as intervals get longer. These relationships remain, even when controlled for birth order, maternal age, maternal education, urban/rural residence, and the sex of the child. 3/ There are two theories of causation to explain this relationship: (a) competition between the youngest and next youngest child for maternal and family resources and (b) depletion of maternal nutrition due to rapid succession of pregnancy and breastfeeding. 4/

Short succeeding intervals are also associated with high child mortality; the longer the interval until the next birth, the better are the survival changes for the preceding child. Early child mortality (age 1 to 2) is especially sensitive to the length of the succeeding intervals, even when controlled for preceding interval length. 5/ The two sources of causation

Figure B-4

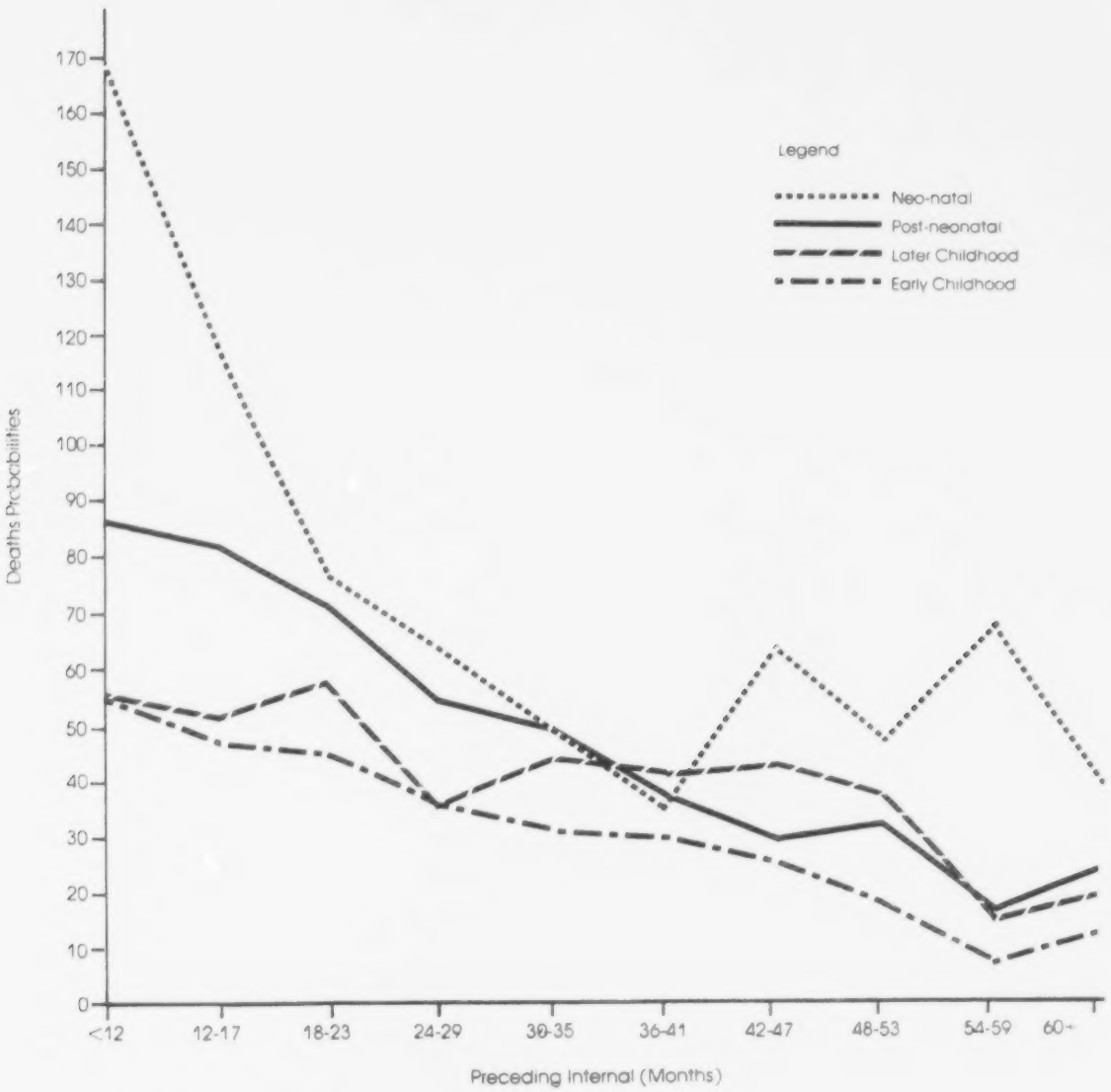
Infant and Child Mortality by Months Since Preceding Births, Peru and Kenya, WFS Data



Source Rutstein 1983

Figure B-5

Probabilities of Death Per 1,000 by the Length of the Preceding Interval, Confined to Cases Where Preceding Child Survived 2+ Years



Source Cleland & Sathar 1983, Figure 1

appear to be premature weaning of the child with the next conception--causing malnutrition and increased risk of succumbing to other illnesses--and competition for family resources with younger siblings.

Some 15 million children under five years of age die every year, most of them in developing countries. What difference could family planning make? A study in Thailand predicted that infant mortality could be reduced by 27 percent if women were to give birth to no more than 4 children and only between the ages of 20-34. 6/ In Pakistan, where infant mortality is now 140 per 1000, both infant and child mortality would fall by about 15 percent "if all children now born within 24 months of an older sibling had the benefit of an interval of 24 to 35 months." And if all birth intervals of less than 36 months could be lengthened to 36-47 months, infant mortality would fall by 30 percent. 7/ If all births were confined to maternal ages 20-34 and all births of order 4 or more were prevented, infant and child mortality would decline by 9-16 percent in Indonesia, the Philippines, and Sri Lanka. 8/ If all births were spaced two to six years apart, infant mortality would decline by an average of 10 percent, and child mortality by 16 percent in 25 developing countries. 9/

Maternal health. Family planning can also have an important impact in reducing maternal illness and death. Maternal deaths are lowest for women between 20 and 30 years old. Table B-1 compares maternal mortality by maternal age group for the United States, Thailand, and Matlab Thana, Bangladesh. The difference across countries is striking: 210 and 570 maternal deaths per 100,000 live births in Thailand and Bangladesh, respectively, compared to 15 per 100,000 in the United States. Within each of these countries, however, the safest age for mothers to bear children is between 20 and 30. Maternal deaths to teenagers in Bangladesh and Thailand

are exceptionally high; in the United States they are also slightly higher for women under 20. After age 30, the risk of maternal death rises, and peaks in the United States and Thailand for women 40 and older.

Table B-1 Maternal mortality by maternal age in selected countries
(Maternal deaths per 100,000 live births)

Maternal age	USA 1974	Thailand 1971	Matlab Thana Bangladesh 1968-70
19 and below	11	204	860
20-24	10	154	380
25-29	13	154	520
30-34	24	209	620
35-39	41	275	480
40-44	86	474a	810
45 and over	234	—	b
All ages	15	210	570

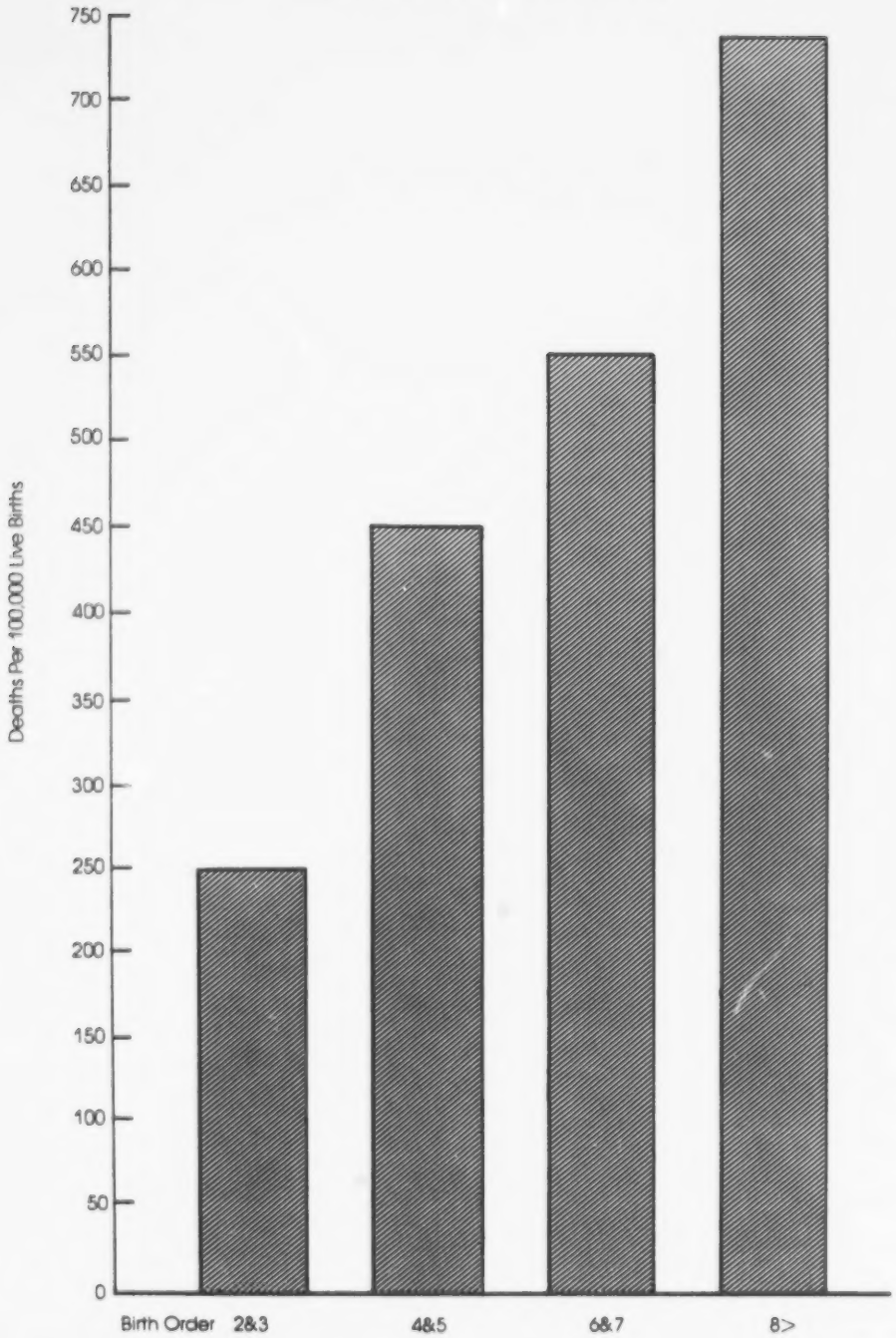
a. Forty and above
b. No reported death in small sample

Source: Eckholm and Newland 1977, Table 2, p. 255.

The risk of maternal death also increases with higher parity--the number of live births to a woman. The lowest risk of maternal death is for the second and third births; relative risk increases thereafter with increasing birth order. In Matlab Thana, Bangladesh, for example, maternal mortality for the second and third births is 250 per 100,000 live births, compared to 450 for birth orders four to five, 550 for orders six to seven, and almost 750 for higher orders (see Figure B-6). For the first birth (not shown), maternal mortality is even higher, due partly to the influence of low

Figure B-6

Maternal Deaths by Birth Order,
Matlab, Bangladesh, 1968-1970



Source Maine 1981, Figure 17

average maternal age at first birth. The independent effects of age and birth order are illustrated in Table B-2, which shows maternal mortality by maternal age for different parities (the number of previous live births) and gravidities (the number of previous pregnancies). Maternal mortality increases with age within each parity, and for any given age mortality increases with increasing parity, although in a few cases the sample size was too small to yield meaningful results. Complications of childbirth, such as anemia, hemorrhage, collapse and tearing of the uterus, malpresentation of the fetus, problems with the placenta and the umbilical cord, and infections also increase with birth order and contribute to the higher risk of maternal death at higher parities. 10/

Table B-2 Maternal mortality rate per thousand live births by maternal age and maternal parity, Matlab Thana, 1968-70

Maternal age (years)	Maternal parity: Primigravida 0	Multigravida 0-1	Multigravida 2-3	Multigravida 4-5	Multigravida 6 or more	All parities
10-19	11.6 (2,666)	3.6 (1,403)	3.1 (323)	45.4 (22)	0.0 (2)	8.6 (4,416)
20-29	17.5 (458)	1.5 (1,991)	3.6 (4,439)	5.8 (3,027)	4.5 (1,326)	4.5 (11,286)
30-39	71.4 (14)	0.0 (64)	2.5 (396)	2.5 (1,212)	7.4 (2,981)	5.8 (4,667)
40-49	0.0 (1)	0.0 (6)	0.0 (13)	0.0 (54)	8.0 (373)	6.7 (447)
All ages	12.7 (3,139)	2.3 (3,464)	3.5 (5,171)	5.0 (4,360)	6.6 (4,682)	5.7 (20,816)

Figures in parentheses are the number of live births.

Source: Chen and others 1974, Table 9.

An estimated half million women die annually from complications of pregnancy and childbirth and many more survive but in a weakened or malnourished state. 11/ Maternal mortality is far rarer than infant or child mortality, but 10-20 times higher in developing than in developed countries. It could be lowered by 19 percent in Mexico, Thailand, Venezuela, and the United States; by 23 percent in Colombia and France; and by 25 percent in the Philippines if all births were limited to mothers between 20 and 34 years old. 12/ If all childbearing were confined to maternal ages 20-39, maternal mortality would decline by 11 percent in Matlab Thana, Bangladesh. If all births of order six and higher were also prevented, maternal mortality would decline 22 percent. 13/

Prevention of Unwanted Pregnancies

An additional benefit of family planning is that it helps couples prevent unwanted pregnancies that otherwise might result in illegal or poorly performed abortions. The International Planned Parenthood Federation estimates that 84,000 women die annually from complications of abortion in 65 developing countries. 14/ With the provision of family planning services, these unwanted pregnancies and the risks of illegal abortion can be almost entirely prevented.

Abortion is extremely safe when performed legally by competent practitioners in sanitary conditions. Where abortion is illegal, however, the procedure is more likely to be self-induced or performed by untrained persons in unsterile conditions, resulting in high incidence of complications and maternal death. About half of the estimated 30-55 million abortions performed annually are illegal. Mortality due to abortion in developing countries (where it is often illegal) is estimated to be 50-100 times higher than in the United States, where abortion is performed legally and in sanitary conditions. A study of ten Latin American cities in the early 1960s found

that mortality from (mostly illegal) abortion represented an average of 34 percent and as much as half of maternal deaths in 3 cities. 15/ Scattered evidence from Africa indicates that hospital admissions for induced abortion are rising, and that a disproportionate number of admissions tend to be teenagers. 16/ Complications of abortion were cited as a cause for one-fifth or more of all registered maternal deaths in Argentina, Chile, Cuba, Mauritius, Nicaragua, Singapore, Trinidad and Tobago, and Uruguay during 1970-78. 17/ The most common complications of illegal abortions are incomplete abortion, pelvic hemorrhage, shock, trauma (such as lacerations of the cervix and perforation of the uterus) and, in India and sub-Saharan Africa, tetanus. In the short term, they may lead to illness, hospitalization or, in the worst cases, death. In the long term, complications from illegal abortions may affect subsequent fertility: women who have had illegal abortions run higher risk of subfecundity, ectopic pregnancy, premature births, stillbirths, chronic pelvic infections, and infection leading to blockage of the fallopian tubes, causing infertility. The health and mortality risks of abortion increase with the gestational age of the fetus.

Chile was particularly successful in reducing the incidence of illegal abortion and related morbidity and mortality through wider provision of contraceptives. Surveys in the early 1960s found that from 20-34 percent of all pregnancies in Chilean women were resulting in illegal induced abortion, and that roughly one woman in four had had at least one induced abortion. Only about 3 percent of couples were using contraceptives. The Chilean government launched a family planning program in 1963, with reduction of morbidity and mortality due to abortion as a major goal. By 1978, 23 percent of couples were using contraception, obstetric admissions to hospitals due to complications of abortion had declined from one in five to one in

eight, and mortality from abortion had declined from 11.8 to 2.4 per 10,000 live births. This last statistic is even more impressive in light of the fact that the birth rate also declined from 37 to 22 per 1000 population over the same period. As of 1980, abortion was still illegal in Chile. 18/

The Health Risks of Contraception

Although family planning can greatly benefit maternal and child health, controlling fertility also entails some small health risk. Some women experience unpleasant physical side effects while using contraception. The severity of side effects varies with the contraceptive method, age, and personal characteristics of the user. Users of the pill, for example, sometimes gain weight and experience nausea. Some IUD users complain of pain and excessive bleeding. They also run a higher risk of developing pelvic inflammatory disease. When side effects cannot be tolerated, the user may seek medical treatment or switch to another contraceptive method.

Some of the side effects of contraceptive methods are considered beneficial by clients, however. In East Africa, the weight gain associated with pill use is looked upon favorably by many women. A major known effect of the injectable contraceptive DMPA is temporary amenorrhea, which alarms some women but is considered a major convenience by others. Some methods have been found to protect against illness. For example, the diaphragm may reduce the risk of cervical cancer and condoms protect against sexually transmitted disease. The pill protects against iron-deficiency anemia, pelvic inflammatory disease, benign breast disease, ovarian cysts, and ectopic pregnancy; it also reduces cramps, menstrual flow, breakthrough bleeding, and premenstrual tension. 19/

The risk of death from contraception is extremely low--much lower than for uncontrolled childbearing. Table B-3 shows the annual risk of death

associated with different methods of fertility control per 100,000 nonsterile women in the United States, by age group. There are two sources of mortality risk associated with fertility regulation: mortality due to pregnancy (from method failure) and mortality due to the method of contraception itself. Note that the mortality risk from the barrier methods and rhythm are entirely birth-related, while risk from other methods includes that which is method-related as well. The risk of death from uncontrolled fertility in Table B-3 exceeds that for all methods of fertility control with two exceptions: pill users who smoke and are 35 or older; and nonsmoking pill users who are 40 or older. The pill is generally contraindicated for these two groups of women. The method with the lowest mortality risk is the condom backed up by (legal) abortion in the first trimester. The mortality risks associated with all methods are extremely low, however.

The mortality risks of fertility regulation in developing countries are not known. The birth-related mortality risk of all contraceptive methods is certainly much lower than the risk of uncontrolled fertility. The risk of method-related mortality is more difficult to assess. Risks for poor, malnourished women may differ from those for higher income, healthier women in industrialized countries. The latter are subject to different disease profiles, habits, and environments than are women in developing countries. Although we do not know the magnitude of method-related mortality risks for developing countries, they would have to be extremely high to exceed the mortality risks of uncontrolled fertility. Contraception is clearly safer than illegal abortion: the estimated risk of death from illegal abortions is 10-250 times greater than from oral contraceptives and 5-125 times greater than from the IUD, depending on the age of the acceptor. 20/

* * * * * * * * * * * * *

Table B-3 Annual number of birth-related, method-related and total deaths associated with control of fertility per 100,000 nonsterile women, by fertility control method, according to age group

Method of control & outcome	15-19	20-24	25-29	30-34	35-39	40-44
No control,						
birth-related	7.0	7.4	9.1	14.8	25.7	28.2
Abortion,						
method-related	0.5	1.1	1.3	1.9	1.8	1.1
Pill/nonsmoker	0.5	0.7	1.1	2.1	14.1	32.0
birth-related	(0.2)	(0.2)	(0.2)	(0.2)	(0.3)	(0.4)
method-related	(0.3)	(0.5)	(0.9)	(1.9)	(13.8)	(31.6)
Pill/smoker	2.4	3.6	6.8	13.7	51.4	117.6
birth-related	(0.2)	(0.2)	(0.2)	(0.2)	(0.3)	(0.4)
method-related	(2.2)	(3.4)	(6.6)	(13.5)	(51.1)	(117.2)
IUD only	1.3	1.1	1.3	1.3	1.9	2.1
birth-related	(0.5)	(0.3)	(0.3)	(0.3)	(0.5)	(0.7)
method-related	(0.8)	(0.8)	(1.0)	(1.0)	(1.4)	(1.4)
Condom, birth-related	1.1	1.6	0.7	0.2	0.3	0.4
Diaphragm/spermicide						
birth-related	1.9	1.2	1.2	1.3	2.2	2.8
Condom and abortion						
method-related	0.1	0.1	0.1	..	..	..
Rhythm, birth-related	2.5	1.6	1.6	1.7	2.9	3.6

.. Fewer than 0.1.

Source: Ory 1983, Table 3, p. 60.

Family planning offers significant health benefits to mothers and children in both developing and industrialized countries. The pattern of relative mortality risk at different maternal ages, parities, and spacing intervals is observed in most countries, regardless of their stage of development. But the absolute risks of infant, child, and maternal illness and death are much higher in developing countries. The absolute health benefits from family planning are therefore much greater in developing countries, since these patterns of relative risk are superimposed on much higher levels of mortality. That is to say that a 10 percent reduction in infant mortality in a country with an infant mortality rate of 150 comes to a reduction of 15 per 1,000 live births. In an industrialized country, an equivalent percentage reduction would lower infant mortality by only 1.5 per 1000. By preventing unwanted pregnancies, family planning can also reduce abortion-related deaths and complications, particularly from self-induced and illegal abortion.

The health risks of contraception have not been evaluated for developing countries, but in industrialized countries they are far lower than the risks of uncontrolled fertility. By making a range of contraceptives available, family planning programs can help clients choose a method which minimizes side effects yet still protects against the much higher risks of pregnancy.

Footnotes, Annex B

1. See Eckholm and Newland 1977, Maine 1981, Nortman 1974, and Puffer and Serrano 1975.

2. Rutstein 1982.

3. Cleland and Sathar 1983.

4. See Cleland and Sathar 1983, Eckholm and Newland 1977, Maine 1981, Taylor and others 1976, and Trussell and Pebley 1983.

5. See Cleland and Sathar 1983 and Rutstein 1982.

6. Wright, N. H. 1975. "Thailand: Estimates of the Potential Impact of Family Planning on Maternal and Infant Mortality." Journal of the Medical Association of Thailand. 58(4): 204-210. Cited in Echolm and Newland 1977.

7. Cleland and Sathar 1983.

8. Trussell and Pebley 1983.

9. Trussell and Pebley 1983.

10. Eckholm and Newland 1977, Maine 1981.

11. Maine 1981, p. 5.

12. Nortman 1974.

13. Trussell and Pebley 1983.

14. Liskin 1980.

15. Ibid., Figure 2.

16. Emrich 1983.

17. Liskin 1980, Table 3.

18. Liskin 1980.

19. Ory 1982.

20. Liskin 1980.

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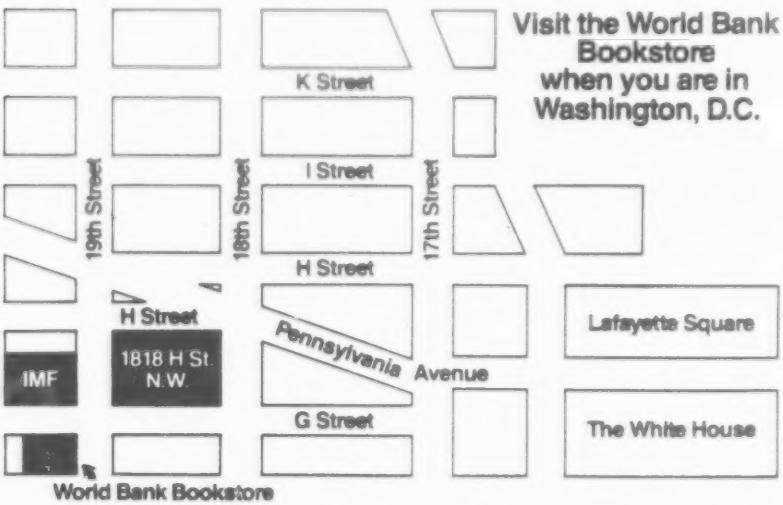

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